CHAPTER 3

Designing Content-Area Text Sets

When Bill teaches comprehension theory to his preservice teachers every fall, he begins the discussion by having his students engage in the following reading task. He asks them to read silently and decide—without talking to a neighbor—what this passage is describing:

> The procedure is actually quite simple. First you arrange things into different groups. Of course, one pile may be sufficient depending on how much there is to do. If you have to go somewhere else due to lack of facilities that is the next step, otherwise you are pretty well set. It is important not to overdo things. That is, it is better to do too few things at once than too many. In the short run this may not seem important but complications can easily arise. A mistake can be expensive as well. At first the whole procedure will seem complicated. Soon, however, it will become just another facet of life. It is difficult to foresee any end to the necessity for this task in the immediate future, but then one never can tell. After the procedure is completed one arranges the materials into different groups again. Then they can be put into their appropriate places. Eventually they will be used once more and the whole cycle will then have to be repeated. However, that is part of life. (Bransford & Johnson, 1973, p. 400)

After they finish reading, Bill asks students to raise their hands if they are absolutely positive they know what the passage is about. Most semesters only 30–40% of students raise their hands to this initial question. Bill follows this query by providing them one word: laundromat. As recognition begins to move through the classroom (often accompanied by audible "ohs" and "ahs"), he again asks who knows what the passage is about. This time, usually, all hands go up. The answer to the question is, of course, washing clothes. Students may be able

to recognize and know the meaning of every word of the passage; however, without the relevant background knowledge that includes the laundromat context, only half or less are able to *comprehend* what the passage is about. The students' background knowledge (or lack thereof) is directly related to their ability to successfully understand their reading. And it was one word from Bill that made the difference between comprehension and confusion.

Bill uses this example to illustrate an important point about learning in the disciplines—students need strategic, scaffolded support from their teachers if they are to comprehend demanding content-area texts and successfully achieve their teachers' instructional objectives and disciplinary goals. And as in the laundry example above, students need their teachers to support understanding *before* reading by providing the relevant, targeted background knowledge to fully engage these texts. In addition, teachers need to use *during*-reading strategies to support comprehension while students read and *after*-reading strategies to help students to synthesize and extend their understanding (Crafton, 1982). This is what many literacy teachers and researchers refer to as a Before–During–After (B-D-A) reading framework (e.g., Laverick, 2002).

In order to improve disciplinary learning and overall literacy outcomes, we also need to think hard about *how much* students are reading. This is what literacy experts call *reading volume,* which in mathematical terms can be defined as the total time spent reading multiplied by the number of words read (Anderson, Wilson, & Fielding, 1988; Cunningham & Stanovich, 1998). Reading volume is not only related to increased levels of comprehension, vocabulary knowledge, and general knowledge about the world (Cunningham & Stanovich, 1997; Sparks, Patton & Murdoch, 2014), it also provides students the practice and stamina they need to engage the increasingly complex texts they face in secondary school, college, and their careers. Unfortunately, both research into classroom reading practices and our own experiences working in secondary schools have shown us that the volume of students' reading within classrooms is often too low to support the levels of literacy development needed to learn important disciplinary concepts from increasingly difficult texts. Secondary teachers are either reading aloud to their students or having students listen to audio recordings of texts instead of reading independently or collaboratively (Swanson et al., 2016). It is not uncommon for teachers to avoid assigning reading altogether, instead choosing to present information in bulleted PowerPoints with worksheets for students to complete (Wexler, Mitchell, Clancy, & Silverman, 2017), or what we call *textless approaches* to instruction (Lewis et al., 2014; Lewis & Walpole, 2016).

Although these textless approaches are problematic, you may be thinking that adding more texts and tasks to an already full curriculum seems like an impossible assignment. However, in this chapter we provide you with a framework for designing integrated sets of related texts that not only provide your students increased reading volume but also give them the critical background knowledge needed to make complex texts accessible. Additionally, these sets

create opportunities for students to make connections between texts, therefore extending their understanding of disciplinary concepts. We begin this chapter by providing an expanded definition of text and an explanation of why combining texts is important for disciplinary instruction. We then discuss comprehension theory and how integrated text sets, situated within a clear B-D-A reading framework, provide the critical background knowledge and strategic support needed to read and understand challenging disciplinary texts. We then provide a clear structure and content-specific examples for choosing these texts—multimedia, informational, young adult, websites, and visuals—that build both background knowledge and motivation, allow for differentiation, and expand student understanding of key disciplinary concepts.

EXPANDING OUR DEFINITION OF "TEXT"

Since this chapter focuses on how content-area teachers can leverage texts to achieve their disciplinary goals and improve their students' literacy outcomes, it is important to define just what we mean by "text." Content-area teachers usually think of their classroom textbooks when they hear that word (Berkeley, King-Sears, Hott, & Bradley-Black, 2014).

Although textbooks can be an integral part of classroom instruction, we argue for a broader definition of the word. For instance, one of author John Green's (2014) excellent "Crash Course" videos on race, class, and gender might be used to foster a deeper understanding of *To Kill a Mockingbird,* a novel that is ubiquitous in high school ELA classrooms (Mackey, Vermeer, Storie, & Deblois, 2012). Lyrics of Civil War songs from both the Union and the Confederacy on AmericanCivilWar.com (n.d.) can be important texts for social studies teachers who want students to analyze primary sources for how the North and South represented the conflict to themselves and the world. An online interactive simulation of a roller coaster from myPhysicsLab.com (Neumann, 2019) can be an important text for science teachers who want their students to experience the impact of friction, gravity, and mass on the motion of objects.

The point is that we have a great variety of texts with which we can build students' knowledge. Expanding our definition of text acknowledges this reality, but true knowledge building will only be accomplished by having students read multiple texts on a variety of topics.

THE LIMITATIONS OF A SINGLE TEXT

There are many reasons why teachers should include multiple texts in their content-area instruction. First, as we argued in our introduction, the volume of

text reading that students do matters a great deal to their ability to independently comprehend text, develop their vocabularies, and add to their knowledge base (e.g., Sparks et al., 2014).

Another reason is that there are significant limitations to using a single classroom textbook to teach disciplinary concepts. Experts in social studies instruction have pointed out that their textbooks often provide only superficial coverage of historical events, or outright historical inaccuracies (Tschida & Buchanan, 2015). More importantly, using a single text prevents students from developing *historical thinking,* the ability to gather and evaluate multiple sources of information and to identify and reconcile competing perspectives of the past (Wineburg, 2001; Wineburg, Martin, & Monte-Sano, 2012). These important disciplinary skills require that teachers choose multiple texts (Bickford, 2013; Tschida & Buchanan, 2015) since multiple perspectives and competing historical accounts are rarely found in a single classroom textbook.

Science textbooks, too, have their weaknesses. Disciplinary experts in science point out that their textbooks often bounce from one idea to another, only superficially address important topics, and are unhelpful for building deep understanding of scientific concepts or scientific thinking (McGlynn & Kelly, 2019). Additionally, science texts are often *inconsiderate* (Daniels & Zemelman, 2003/2004), meaning that they can be poorly organized, overloaded with information, and difficult to read. McGlynn and Kelly (2019) have likened reading science textbooks to "looking at a well-organized 40-page menu at a restaurant and trying to decide what to order" (p. 36). It is no wonder, they argue, that students find them difficult to learn from.

ELA teachers also need to consider the drawbacks of single texts. Wells and Batchelor (2017) argue that although the individual stories, novels, plays, and poems that students read in ELA can be important reading experiences, they rob students of the opportunity to confront multiple perspectives. This limits students' ability to make more meaningful text-to-self, text-to-text, and text-to-world connections (Gritter, 2011), and prevents them from developing the ethical respect needed to empathize with those whose experiences are different from their own (Rabinowitz & Smith, 1998). Lewis and Flynn (2017) argued that without the critical background knowledge and context that multiple texts provide, students will not be able to apply what they learn from literary texts to contemporary issues of social justice and equity, an important National Council of Teachers of English (NCTE) standard (NCTE, 2012). For instance, although *To Kill a Mockingbird* directly addresses American racism, the novel is written by a white author, told from the perspective of a white narrator, and does not address contemporary racial problems facing our schools and communities (Lewis & Flynn, 2017). As in social studies and science, the single-text approach does not allow teachers to accomplish discipline-specific goals that require multiple perspectives embedded in multiple texts.

MULTIPLE TEXTS AND BACKGROUND KNOWLEDGE

There is a third important reason for using *sets* of texts instead of single texts. In Chapter 2, we spoke about the quantitative, qualitative, and reader-task considerations that can act as a barrier to students as they attempt to comprehend challenging texts. Although the Common Core State Standards—and other state standards that are aligned with them—require students to "read and comprehend complex literary and informational text independently and proficiently" (NGA & CCSSO, 2010, p. 35), many students need help to overcome the comprehension challenges that increasingly difficult texts pose (Best et al., 2008). Teachers must not only select instructional strategies that support comprehension before, during, and after reading, they must also think about how to strategically combine related texts in ways that build the relevant background knowledge needed to comprehend these demanding texts by reading other texts (Lupo, Strong, Lewis, Walpole, & McKenna, 2018).

Why should teachers focus on building background knowledge? First, as students get older, their accumulated background knowledge plays an increasingly important role in their ability to comprehend texts (Alexander, Kulikowich, & Jetton, 1994), and the more prior knowledge readers have, the better their comprehension is during reading (Arya, Hiebert, & Pearson, 2011; McNamara, Ozuru, & Floyd, 2011). Second, activating readers' prior knowledge before reading improves comprehension, regardless of whether students read easier or more challenging texts (Lupo et al., 2019). Because knowledge building is essential to designing instructional text sets, it is important first to understand how readers use their background knowledge to construct meaning from what they read. Understanding the comprehension process can help teachers think more strategically about the instructional strategies they employ and the texts they choose to support their students' understanding.

HOW READERS COMPREHEND TEXTS

Walter Kintsch (1988, 2013) provides us with a helpful representation of how readers use background knowledge to construct a comprehensive mental model of the text. He calls this the *construction–integration model*. In this conception, comprehension occurs in three distinct stages that are increasingly more complex (see Figure 3.1). At the first stage, *the surface code,* readers interpret individual words and phrases on a page or screen and construct the basic gist of a text, or what Kintsch (1988) calls the *text base*.

Although having a basic understanding is important, secondary teachers need their students to have a more comprehensive understanding of a text if they are to use reading to achieve challenging disciplinary goals. In this case, students must be able to integrate relevant background knowledge with this *text base* to

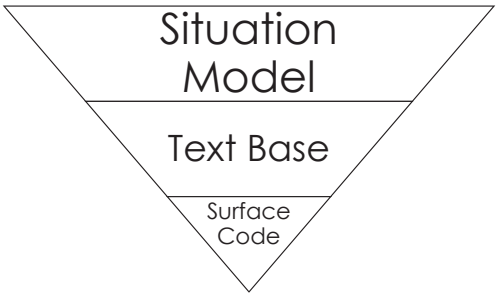

FIGURE 3.1. Levels of text representation.

form a *situation model,* a comprehensive representation of the text that refines and expands on their gist-level understanding. Unfortunately, research demonstrates that many adolescent readers are unable to develop this comprehensive situation model (Compton, Miller, Elleman, & Steacy, 2014). This is why teachers need to think hard about instruction that can provide students with the relevant background knowledge and experiences that can build this more robust textual representation.

To illustrate this process, let's look at a sample instructional segment that is focused on Shakespeare's *Romeo and Juliet,* a text that many of us are familiar with and that is another staple of the high school ELA curriculum (Mackey et al., 2012). In this segment the teacher is using the first act of the play to build her students' ability to analyze the development of Romeo and Juliet as characters, which is both an important disciplinary goal and meets a key standard for reading literature: "Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of a text, interact with other characters, and advance the plot or develop the theme" (NGA & CCSSO, 2010, p. 38).

In the famous speech that follows their meeting at her family's masquerade ball, Juliet expresses both her love for Romeo and her despair over the fact that Romeo's family—the Montagues—are in a life and death feud with her own family, the Capulets. Juliet speaks:

O Romeo, Romeo, wherefore art thou Romeo?
Deny thy father and refuse thy name.
Or if thou wilt not, be but sworn my love
And I'll no longer be a Capulet.
'Tis but thy name that is my enemy:
Thou art thyself, though not a Montague.
What's Montague? It is nor hand nor foot
Nor arm nor face nor any other part
Belonging to a man. O be some other name.
What's in a name? That which we call a rose

> By any other name would smell as sweet;
> So Romeo would, were he not Romeo call'd,
> Retain that dear perfection which he owes
> Without that title. Romeo, doff thy name,
> And for that name, which is no part of thee,
> Take all myself.

According to the construction–integration model, students begin the process by reading the surface code of the individual words and phrases on the page (see Figure 3.2). From this code (and possibly some translation support from the teacher) they are able to construct the gist, or text base, from this excerpt. In this case students will recognize that Juliet is a Capulet, Romeo a Montague and that, despite their family names and feud, Juliet has fallen deeply in love with him. However, in order to move past the text base to construct the situation model suitable for character analysis, discipline-specific background knowledge is needed.

Discourse analysts (Fahnestock & Secor, 1991; Wilder, 2002) and instructional specialists who focus on literature studies (Appleman, 2015; Beers & Probst, 2012) have pointed out that experienced readers of literature use specific types of interpretive background knowledge and critical frameworks to make sense of literary texts (Lewis & Ferretti, 2009). One well-known framework is the feminist critical lens in which readers interrogate a text for issues of gender, power, and language use (Appleman, 2015). For instance, if students are familiar with this gendered approach, they might focus on Juliet's relative lack of power in her family structure, a fact that is evidenced by her father's decision to marry her off against her will to a man she does not love and who is almost twice her age. It is no wonder, then, that Juliet wishes that Romeo could "deny [his] father

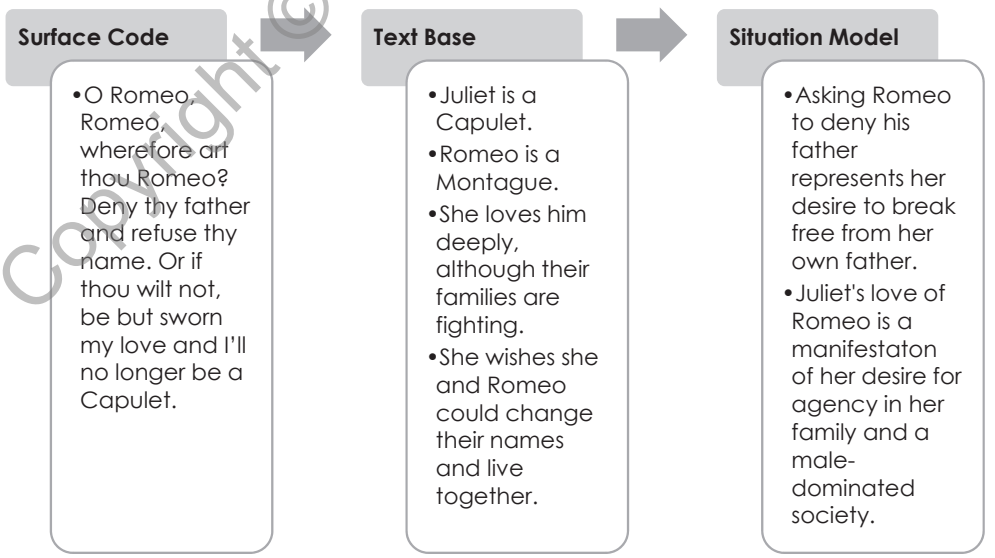

FIGURE 3.2. Illustration of the construction–integration process in *Romeo and Juliet*.

and refuse [his] name," something that she, too, wishes she had the power to do. Possessing this critical background knowledge, students can begin to move from a plot-level, text base understanding (Juliet loves Romeo but wishes he was from a different family) to a more comprehensive situation model of Juliet's "multiple or conflicting motivations" (NGA & CCSSO, 2010, p. 38). In this case students might construct the interpretation that Juliet's infatuation with Romeo is more than just the capricious whim of an adolescent girl who has fallen in love at first sight. It is, instead, a very real attempt to thwart her father's will and take back control of her life from the male-dominated society that treats women like possessions and perpetuates senseless feuds like the one that will eventually take her life.

It is clear that building this kind of interpretive situation model takes discipline-specific background knowledge that must be strategically taught. Otherwise, students will continue to operate at the plot or gist level and be unable to form a more comprehensive situation model where the work of the disciplines really happens. This leads to an important question. How do teachers actually go about building the background knowledge that is most critical to their students' understanding of disciplinary concepts and content-area material? Using before-reading instructional strategies is one way that they might begin this process, and in Chapter 4 we discuss several research-validated approaches to building background knowledge in this way. However, considering that reading volume and background knowledge are both crucial to students' learning, we also suggest building knowledge for reading challenging content-area texts by reading and viewing other related texts in an integrated collection of texts that we call the quad text set framework (Lewis et al., 2014; Lupo et al., 2018). In this way, we build background knowledge *for* reading *by* reading (Lewis & Walpole, 2016) and then expand our text set with other texts that will help students synthesize and extend their understanding.

DESIGNING A QUAD TEXT SET

In its most basic form, a quad text set is composed of four different kinds of texts, which are represented in Figure 3.3. The first is a challenging content-area text written at or above grade level that we call the *target text* (Lewis et al., 2014). The next three texts are selected to provide background knowledge that students need to construct meaning from the target text or to extend their understanding through text-to-text connections. These include an accessible and motivating *visual, video,* or *digital text* that serves to immediately engage students in the topic and activate the basic background knowledge needed to form a text base understanding of the target text (Lewis et al., 2014; Lupo et al., 2018). The next text type is an *informational text—or set of informational texts*—selected to build additional, discipline-specific background knowledge that students need in order to construct a situation model of the target text. The fourth text is an *accessible text*—young-adult fiction or nonfiction, magazine or newspaper articles, or texts

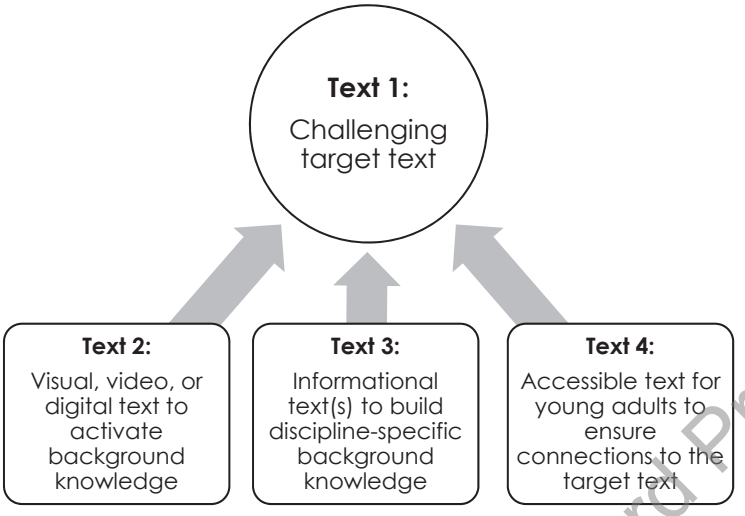

FIGURE 3.3. The quad text set framework.

drawn from popular culture—that helps students to make important text-to-text connections, extend their understanding of the target text, and find relevance in the disciplinary concepts that are the focus of instruction (Lewis et al., 2014; Lupo et al., 2018).

We would like you to think of the process of designing a quad text set as *planning backwards*. By this we mean that the first step in planning a quad text set is identifying the key learning objectives for the instructional unit or lesson from state learning standards. The second step is choosing a challenging target text that serves as an effective vehicle for achieving those learning objectives (Lewis et al., 2014). As we often say to our preservice teacher candidates, "We are not teaching *the text*; we are teaching skills *through the text*." Therefore, it is important that teachers choose a target text that is both complex enough to be challenging and rich enough to convey important disciplinary concepts. Teachers then work backwards from there to strategically choose other texts that build the relevant background knowledge and motivation needed to comprehend and make connections to the target text (Lupo et al., 2018). However, it is not enough to thoughtfully design a quad text set and then just assign the readings, hoping that students will be able to comprehend the target text without additional instructional support.

THE B-D-A FRAMEWORK AND THE QUAD TEXT SET

Without strategically planning instruction to support students when they read, it is still possible that they will not comprehend the texts that make up a quad text set, nor will they be able to achieve their teachers' instructional objectives. Before we provide examples of quad text sets designed for ELA, social studies, and science, we provide a brief preview of some research-based instructional strategies

that we recommend using in concert with the sample quad text sets that follow. Remember that this is just a brief preview. We provide more specific explanations of these before-, during-, and after-reading strategies in subsequent chapters.

Before reading we recommend using strategies that provide students a preview of the texts they will read (e.g., Manzo & Casale, 1985), a graphic organizer that provides students a map of the text structure of their reading (e.g., Alvermann, 1981; Smith & Friend, 1986), or a visual representation of key vocabulary that students will encounter in the texts (e.g., Schwartz & Raphael, 1985). We focus on knowledge-building instructional strategies before reading because background knowledge—including vocabulary and text structure knowledge—is highly correlated to reading comprehension (Langer, 1984; Stahl, Jacobson, Davis, & Davis, 1989). A full menu of before-reading strategies to use with texts is presented in Chapter 4.

During reading we recommend providing comprehension support through carefully constructed reading guides that focus student attention and support the active construction of meaning from texts when reading independently (e.g., McKenna, Franks, Conradi, & Lovette, 2011; Wood, 2011) or through collaborative reading frameworks that support comprehension through strategic reading in pairs (e.g., Fuchs, Fuchs, & Kazdan, 1999) or small groups (Palincsar & Brown, 1984). A full explanation of several types of reading guides, the Peer-Assisted Learning Strategies (PALS) paired reading framework (Fuchs et al., 1999), and the Reciprocal Teaching small-group framework (Palincsar & Brown, 1984) are addressed in Chapter 5.

After reading we recommend supporting students in synthesizing textual information through text-based discussions (e.g., Sandora, Beck, & McKeown, 1999; Chinn, Anderson, & Waggoner, 2001), summary writing activities (e.g., Brown & Day, 1983; Buehl, 2014), or writing text-based arguments that encourage students to apply the information they gain from their reading (e.g., Lewis & Ferretti, 2011). A menu of these discussion and text-based writing activities can be found in Chapters 6 and 7, respectively. In addition, we recommend teaching students strategies for planning and revising argumentative, informative/explanatory, and narrative compositions (De La Paz & Graham, 2002), including the use of genre-specific text structures (Englert, Raphael, Anderson, Anthony, & Stevens, 1991). We discuss strategy instruction and the writing process for extended writing assignments in Chapter 8.

In the examples that follow, you will see that the instructional strategies we have selected for each text fit into the B-D-A reading framework that is embedded within the template we use to design quad text sets with teachers. Figure 3.4 presents that planning template. Beginning with this chapter, we demonstrate how we use this template to match texts and instructional strategies to meet content-area instructional objectives. We return to this template in subsequent chapters as we discuss the instructional strategies that we have used with teachers to support students' comprehension before, during, and after reading, as well as to improve students' writing.

Instructional Objective(s):	
Visual Text:	
Instructional Strategies	**Before Reading:**
	During Reading:
	After Reading:
Informational Text(s):	
Instructional Strategies	**Before Reading:**
	During Reading:
	After Reading:
Target Text:	
Instructional Strategies	**Before Reading:**
	During Reading:
	After Reading:
Accessible Text:	
Instructional Strategies	**Before Reading:**
	During Reading:
	After Reading:
Extended Writing:	

FIGURE 3.4. Quad text set planning template.

Quad Text Set Example for ELA

Let's take another look at our ELA teacher who is preparing her students to read *Romeo and Juliet*. Based on her school curriculum and state standards, she identifies character analysis as one of the key instructional objectives for her unit and decides to design a quad text set to achieve that goal. Specifically, she wants her students to learn to analyze how characters develop over the course of a play, interact with other characters, advance the play's plot, and develop the theme (NGA & CCSSO, 2010, p. 38). This instructional objective is displayed in the quad text set example for *Romeo and Juliet* in Figure 3.5. Keeping this objective in mind, she chooses Act I of *Romeo and Juliet* as an effective target text to teach this skill. Given its length, she decides that she will design a separate quad text set for each of the play's five acts. Planning backwards, she understands that the play presents several challenges to her students in achieving this objective, not the least of which is the Elizabethan language that can serve as a significant barrier to understanding the play at even the gist or text base level.

To help students overcome the language barriers—as well as to engage their interest—the teacher begins her quad text set by showing a brief video excerpt of Act I, Scene i, from Martinelli and Luhrmann's (1996) adaptation of the play set in modern California. This highly stylized and action-packed clip provides a gist-level understanding of the play's context and the feud between the Montagues and Capulets, as well as a helpful introduction to some of the play's main characters, including Romeo himself. Knowing that this is an important text for activating background knowledge, the teacher also provides instructional support before, during, and after viewing to make sure that students understand it and can apply what they learn when reading the target text. We describe the B-D-A supports for each text in this text set in subsequent chapters.

Because the teacher selected the target text to teach character analysis skills, discipline-specific background knowledge will also be needed to form a situation model of the play suitable for literary analysis and interpretation. First, the teacher understands that in order for her students to analyze what motivates Romeo and Juliet as characters, she must build their background knowledge of the Elizabethan era, the strict gender roles of the age that defined and controlled men's and women's behavior, and the general lack of rights that women had to control their own destinies. In order to provide that background knowledge, she chooses an online informational text on the lives of Elizabethan women (Elizabethi.org, 1998–2019) that provides students with an introduction to issues of gender and power, building the discipline-specific background knowledge needed to analyze the characters' deeper motivations in *Romeo and Juliet*.

Now that students understand the situational and social context of the play, they are ready to read the rest of Act I and analyze the "star-crossed lovers" as characters. Although the students have gained relevant background knowledge from the preliminary texts in the set, the teacher still needs to support

Instructional Objective(s): Analyze how characters develop over the course of a text, interact with other characters, advance the plot, and develop the theme.	
Visual Text: Video of Act I from contemporary film version of *Romeo and Juliet*	
Instructional Strategies	**Before Reading:**
	During Reading:
	After Reading:
Informational Text(s): Article on gender roles and power in Elizabethan England	
Instructional Strategies	**Before Reading:**
	During Reading:
	After Reading:
Target Text: Act I of Shakespeare's *Romeo and Juliet*	
Instructional Strategies	**Before Reading:**
	During Reading:
	After Reading:
Accessible Text: Selected chapters from *Eleanor and Park* by Rainbow Rowell	
Instructional Strategies	**Before Reading:**
	During Reading:
	After Reading:
Extended Writing:	

FIGURE 3.5. ELA quad text set on *Romeo and Juliet.*

comprehension through B-D-A instructional choices. In this case she knows that she will have to provide students with help in understanding both the plot and vocabulary of the first act. More importantly, she will need to plan the strategic supports that will encourage students to focus on Romeo and Juliet as characters and to make inferences about how and why they fall in love so quickly based on their knowledge of Elizabethan gender roles.

To reinforce how the gendered expectations of society can impact the characters, the teacher chooses her fourth text, a selection of chapters from a contemporary YA novel, *Eleanor and Park* (Rowell, 2012). This story traces the relationship of two very different high school students: Eleanor, an introverted and awkward newcomer whose family lives in poverty and in constant fear of her violent and controlling stepdad, and Park, a comic-book-loving teen from a loving and supportive mixed-race family who, nonetheless, has to deal with his father's narrow definition of manhood. Although this young adult love story takes place in the mid-1980s (instead of the late 1500s), both characters, like Romeo and Juliet, have to negotiate the societal expectations of what it means to be a man and a woman. Connecting key chapters to the play encourages students to extend their understanding of the representations of gender and power in *Romeo and Juliet*.

At the conclusion of this quad text set, the teacher wants her students to demonstrate their understanding by writing an expository essay that explores gender and power and its impact on character. Recognizing that her students may have difficulty without instructional support for planning before writing, she provides a graphic organizer to help her students select evidence from the texts and organize ideas using a compare–contrast structure (Englert et al., 1988). The teacher plans to adjust the amount of support she provides based on students' needs, allowing most students to draft their essays independently before editing and revising them with peer assistance. We address these kinds of extended written assessments in Chapter 8.

The Order of Texts

It is important to note here that our experiences using the quad text set approach with teachers have indicated that the order in which texts are presented to students is important (Lupo et al., 2018). Interspersing knowledge-building texts with chunked or repeated reading of the target text can improve students' understanding and motivation to read the challenging target text (Lupo et al., 2018). For instance, in the *Romeo and Juliet* quad text set, the teacher may have students reread Act I, Scene iv (where Lady Capulet encourages Juliet to reconcile herself to the arranged marriage) after students read the chapters from *Eleanor and Park*. The targeted reread of this scene allows students to directly apply their knowledge of gender and power in this accessible text to their analysis of Juliet's situation and provides insight into her character's motivation. The point is that teachers can strategically and flexibly order the texts within a quad text set to provide students

with both increased reading volume and the opportunity to acquire important disciplinary knowledge and skills.

Quad Text Set Example for Social Studies

In order to illustrate the flexible use of the framework, we discuss an example of a quad text set that includes an inquiry extension, one that might be used in a high school social studies classroom. This quad text set is based on one designed by one of Bill's teacher candidates. It is a particularly strong example of how quad text sets can be used to build both critical background knowledge and disciplinary literacy skills. Based on the curriculum and state social studies standards, this teacher decided to focus her quad text set on cultivating students' ability to trace the development of the idea of segregation over time and explain patterns of continuity and change in contemporary United States history (Delaware Department of Education, 2018, p. 1). She also would like to attend to the disciplinary literacy skill of determining the central idea of a primary source and summarizing its key details (NGA & CCSSO, 2010, p. 61). These two instructional objectives, focused on both content and literacy skills, are reflected in the social studies quad text set example in Figure 3.6. You can also see that this teacher has chosen the *Brown v. Board of Education* decision as a challenging target text that serves as an appropriate vehicle for meeting her instructional objectives.

Working backwards from the target text, the teacher understands that she needs to activate students' background knowledge about segregation and therefore chooses a video text called "Kids Talk about Segregation" (WNYC, 2016). This is a short but engaging interview with Bronx fifth graders who are studying the topic in a predominately minority school. In the video the children define what segregation is in simple terms and provide moving examples of segregation that still manifest themselves in their current school communities.

To build more discipline-specific background knowledge, the teacher chose an informational text that detailed the history of racially segregated schools and communities in the United States (Nodjimbadem, 2017). This text, titled "The Racial Segregation of American Cities Was Anything But Accidental," introduces two important historical terms that are critical to their understanding of this concept: *de jure segregation,* which is segregation that happens through laws (like Jim Crow laws), and *de facto segregation,* which is segregation that is not legally prescribed but occurs despite the fact that there are no segregation laws in place (like the racial divide between inner-city and suburban schools in the North). This text is important because it provides a chronology of both kinds of segregation in the United States and raises questions about whether the de facto segregation of the northern states was, in fact, segregation by law.

Now that students have background knowledge of both historic and contemporary examples of segregation, they are ready to read the target text, the *Brown v. Board of Education* decision (Warren, E., & Supreme Court of the United States,

Instructional Objective(s): Analyze historical materials to trace the development of an idea over time and explain patterns of continuity and change; determine the central idea of a primary source and accurately summarize the central idea and key details.	
Visual Text: "Kids Talk about Segregation" video	
Instructional Strategies	**Before Reading:**
	During Reading:
	After Reading:
Informational Text(s): Article on the history of racial segregation in the United States	
Instructional Strategies	**Before Reading:**
	During Reading:
	After Reading:
Target Text: *Brown v. Board of Education* decision	
Instructional Strategies	**Before Reading:**
	During Reading:
	After Reading:
Accessible Text: Article on racial disparities in modern U.S. public schools	
Instructional Strategies	**Before Reading:**
	During Reading:
	After Reading:
Extended Writing:	

FIGURE 3.6. Social studies quad text set on segregation.

1953). This landmark Supreme Court decision ruled that state-sanctioned segregation of public schools was unconstitutional. It is a text that is both a rigorous primary-source document and an important vehicle for achieving the teacher's disciplinary goals.

Because the teacher wants her students to analyze segregation for patterns of continuity and change over time, she chooses a fourth text to connect to the *Brown v. Board of Education* decision, a magazine article published by the American Psychological Association (Weir, 2016). The article, "Inequality at School," details the impact of racial bias on contemporary school systems and how this bias not only leads to inequities but also to de facto segregation in many modern schools. She chose this text because she wanted her students to see that although state-sanctioned segregation was deemed unconstitutional in the past, segregation is still found in many schools and leads to continuing inequities. This text is an important tool that encourages students to analyze whether the *Brown v. Board of Education* decision actually worked given what they now know about segregation in today's schools.

Leveraging the knowledge that students now have about de jure and de facto segregation, the teacher encourages students to extend their understanding through a structured inquiry project. For this quad text set, she designed a project that both encourages students to apply what they learned about segregation and also gives them practice using the authentic tools of inquiry that social scientists actually use (Lewis et al., 2014). We discuss research and inquiry activities in greater detail in Chapter 9.

Quad Text Set Example for Science

Science teachers, too, can leverage quad text sets to improve learning and literacy outcomes and meet the rigorous Next Generation Science Standards (NGSS Lead States, 2013). Let's examine the case of a middle school science teacher who is designing a unit on climate change. This is a challenging subject for a number of reasons. First, climate change is highly politicized, and debates about the issue have both obscured the science and led to widespread confusion among his students about the topic. Additionally, this teacher's aging textbook does not adequately cover climate change, nor does it contain up-to-date data on global changes or visual representations of that data. These limitations make it very difficult to meet the science standards that he intends to focus on with this quad text set: the impacts of humans on Earth's systems, as well as using graphs, charts, and images to identify patterns in data (NGSS Lead States, 2013, p. 72). He also intends on addressing the disciplinary literacy skill of integrating technical information expressed in words in a text with a visual representation of the information (NGA & CCSSO, 2010, p. 62). You will see these two instructional objectives displayed in the science quad text set example in Figure 3.7.

Starting from the instructional objectives, he chooses his target text. In order to overcome the limitations of his textbooks, he locates a set of five connected

web pages that explain how individuals, businesses, communities, nations and the world can act to mitigate climate change (National Geographic Partners, 2015–2019). Not only does this text align with the NGSS around human impacts on Earth's systems, it also provides his students with a blueprint for taking action against this threat.

To mitigate the uneven background knowledge of his students, the teacher begins to plan backwards. He plans to build the relevant background knowledge needed to understand the target text by choosing a short video called "Climate Change 101" with Bill Nye (National Geographic, 2015). This video text provides a working definition of climate change and presents several clear arguments for why climate change represents a very real threat to life on Earth. Not only is this text an entertaining—though serious—introduction to the topic, it serves an important role in helping this teacher overcome students' misconceptions about climate change.

To build more specific background knowledge, the teacher chooses the digital informational text "Climate Change: How Do We Know?" from the National Aeronautics and Space Administration (NASA, 2019) Global Climate Change website. This text not only provides discipline-specific background information about the issue, it also includes interactive graphs and visualizations to help students to track global temperatures, sea-level rise, land ice mass, and ocean acidification over time. The ability to interpret visual representations of data is an important element of the science and disciplinary literacy standards that the teacher hopes to achieve with this unit. To make efficient use of time, the teacher uses the jigsaw method (Poindexter, 1994) to support students' comprehension. First, students get into "expert groups" where each group is assigned one section of the text to read. Next, students meet with a new group—the "jigsaw group"—containing one member from each of the expert groups. Here they share the information that they found in each of their sections. Although some teachers bristle at the fact that students only read one section of this text, this strategic decision provides his students more time to read and comprehend the target text.

To extend student understanding of the impacts of climate change, he assigns the first chapter of the award-winning YA novel *Ship Breaker* by Paolo Bacigalupi (2010). This novel takes place in a post-oil dystopia ravaged by climate change and the rising sea levels and superstorms that are generated by a warmer, wetter Earth. This chapter, which introduces a group of child laborers who break up ships for scrap to eke out an existence, allows students to apply what they learned about the natural and economic impacts of climate change to a fictional world where characters are controlled by a degraded and unstable environment.

Now that students have a fuller understanding of the scope of the problem, they are ready to read the target text on mitigating climate change. The teacher supports comprehension before, during, and after reading, and then encourages them to share their understanding of the target text in an extended writing assignment.

Instructional Objective(s): Construct an argument supported by evidence (e.g., patterns in graphs, charts, and images) for how humans impact Earth's systems; integrate technical information expressed in words in a text with a visual representation of that information.	
Visual Text: "Climate Change 101" video with Bill Nye	
Instructional Strategies	**Before Reading:**
	During Reading:
	After Reading:
Informational Text(s): "Climate Change: How Do We Know?" website	
Instructional Strategies	**Before Reading:**
	During Reading:
	After Reading:
Accessible Text: Chapter 1 of *Ship Breaker* by Paolo Bacigalupi	
Instructional Strategies	**Before Reading:**
	During Reading:
	After Reading:
Target Text: "5 Ways to Curb Climate Change" articles	
Instructional Strategies	**Before Reading:**
	During Reading:
	After Reading:
Extended Writing:	

FIGURE 3.7. Science quad text set on climate change.

FINAL THOUGHTS

The quad text sets we described in this chapter accomplish three important goals. First, they provide students with the critical background knowledge needed to read and understand challenging content-area texts by reading and viewing more accessible texts. Second, the use of multiple texts increases the volume of literary and informational text reading that students need to develop reading stamina, improve their vocabulary knowledge, and gain knowledge about the world. Third, sets of connected texts allow students to make important connections that extend their understanding of concepts across texts. It is clear that quad text sets offer students many more learning opportunities than a single classroom textbook or teacher lecture can provide.

That being said, finding texts and designing quad text sets can be difficult for teachers who already have a lot on their plates. It is crucial, then, that teachers work together with their school and department colleagues to determine instructional objectives, identify target texts that are effective vehicles for those objectives, and then find and vet texts that build the appropriate background knowledge and extend student understanding. Although it can be frustrating and time consuming to design text sets independently, by working together with colleagues, teachers can share the burden and improve the quality of their text sets through creative collaboration.

At first glance, it may also seem like a lot of work to fill in the quad text set planning template with before-, during-, and after-reading supports for each text. However, we argue that doing so may actually require less planning time, not more. Remember that we provided only a preview of a handful of instructional strategies in this chapter. After reading about them in more detail in subsequent chapters, you will have a toolkit of strategies for supporting comprehension at your disposal. Once learned, you will be able to select from each of these tools based on your instructional objectives and the demands of the texts in your quad text set.

It is equally important that once teachers build their quad text sets, they need to organize digital or physical sites to store them and the supporting materials. Bill often tells the story of how, because of retirements, changing schools, or other reasons, nearly 40% of teachers left the high school where he was teaching during one particular school year. And nearly all of the materials that those teachers found, created, and used over the course of their careers walked out the door with them. This disadvantaged not only the teachers who had to take their places but, more importantly, the students who no longer had access to the plans and materials of experienced teachers. Therefore, when you design your quad text sets, we suggest that you work together, thoroughly vet texts and materials, and get them stored!