

What Does It Take?

THE CHALLENGE OF DISCIPLINARY LITERACY

Cynthia Hynd-Shanahan

Teachers and school leaders have two distinct reactions when discussion turns to disciplinary literacy. Reaction One: They are filled with anxiety and uncertainty about what the term means and how to teach it. Reaction Two: They think they know what it means and are already engaged in teaching it, because they are teaching content area reading. Both reactions beg for a thoughtful discussion, and in this commentary, I hope to begin one. In the past few years, I've been involved in trying to help teachers and school leaders learn what disciplinary literacy is *and is not* and to foster the teaching of discipline-specific literacy practices of history, science, mathematics, and English. I've also worked with teams to write curriculum or develop discipline-specific curriculum principles. This work has been both challenging and rewarding. In this commentary, I would like to address questions that arise most often in regards to disciplinary reading, acknowledging that disciplinary writing also deserves a similar focus but is beyond the bounds of this article.

Question #1: When I teach content area reading, aren't I already teaching disciplinary literacy?

The two concepts, disciplinary literacy and content area reading, are often discussed as if they are the same thing, although they



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have different roots, embody different aspects of literacy, and are practiced in different ways (Shanahan & Shanahan, 2008; Shanahan, Shanahan, & Misischia, 2011). Content area reading has been around for a century or so (Mraz, Rickelman, & Vacca, 2009), whereas disciplinary literacy is a relative newcomer, arriving on the scene sometime in the early 1990s. Content area reading, as we know it today, is a product of educational psychology and reading education, whereas disciplinary literacy arises from some fairly disparate fields of study: educational psychology, yes, but also linguistics (e.g., Fang & Schleppegrell, 2010; Halliday, 1998; Schleppegrell & Fang, 2008) and the various subject matter disciplines themselves—physics, history, mathematics, etc. (e.g., Bazerman, 1985, 1997; Geisler, 1994; Wineburg, 1991).

The main difference between the two is in the aspect of literacy that is being emphasized. Content area reading teachers view reading tasks as similar across the disciplines. Given that, students can develop a “toolbox” of strategies that can be used no matter the field to help them with comprehension. In practice, schools that are serious about developing their students' content area reading skills often engage in strategy of the week/month campaigns, with a strategy introduced in one subject and then used across the various subjects. Or they invest in programs that teach students these strategies using examples of texts from various subject matters and genres. When I worked with developmental readers at the college level, I taught students the same strategies across three subject areas: history, science, and literature.

Disciplinary literacy, on the other hand, emphasizes the *differences* among the disciplines. The differences lie in what is important to pay attention to, what counts as evidence for an argument, what level of confidence the field has in the knowledge it produces, how texts are organized, how sentences are constructed, and so on. Students, then, need to learn how to engage in practices that will help them solve specific problems with disciplinary texts. A reader might make a timeline to understand the relationship among events in history if the text being read afforded it, but would not make a timeline to learn an explanation of a scientific principle. Students might benefit from understanding that sentences about historical events construe the time, place, and manner in which things occur, and they construe the actors, their motivations, and their goals. Science reading involves, to a greater extent than other subject areas, the necessity of translating explanations to models, diagrams, or formulas and vice versa.

But how does one know what kinds of processes to use in each discipline? The idea is that it takes more than learning the content of a particular text to truly understand it. In disciplinary literacy, there is a distinction between *content knowledge*, which is knowledge about particular topics of study, such as World War II or mitochondria or plane geometry, and *discipline knowledge*, which is knowledge about the way knowledge is created, communicated, and shared within a discipline.

If you understand that historians create knowledge by gathering evidence for their claims using documents and artifacts from the past and by reading other historical accounts, you will understand why historians insist that they are *interpreters* of history rather than *chroniclers*. Their evidence is always incomplete and often contradictory. For example, historians may know that incidents in the Tonkin Gulf happened on August 2 and 4 (because of extensive and corroborated documentation), but they do not know for sure what really happened (because of conflicting reports); given the evidence, they can make only educated guesses about the motivations/goals of the president when he presented a particular version of the events in an effort to persuade Congress to pass

the Tonkin Gulf Resolution. Any original document could be biased. Dean Rusk, for example, may be protecting his reputation by insisting that U.S. ships had been attacked on August 4, although others insist this was not so. You will also understand why historians question everything and believe that a single account affords a skewed understanding of history.


Likewise, if you understand that mathematicians rely on the rules of logic to solve problems, then you will also understand why they insist that the accuracy of that logic is paramount and that every step in a solution or a proof must be carefully considered. These ways of viewing the knowledge in their respective fields are ingrained beliefs that inform the practices in which they engage. Historians look at the authors of history and question in what ways those authors' perspectives might have altered their depiction of an event. Scientists look at one's adherence to experimental principles to determine how much trust they can put in scientific findings. Mathematicians read a proof again and again, looking for errors and trying to understand the logic.

In *disciplinary literacy*, the discipline itself and the ways of thinking in that discipline determine the kinds of strategies to use in order to understand texts. This differs from content area literacy, in which the strategies one knows determine how reading ensues.

Question #2: Do I have to stop teaching content area reading in order to teach disciplinary literacy?

Sometimes I'll be reading a text within a particular discipline—say, in science—and I'll think, "Wow, this material begs for a process diagram" or "I could really use a comparison/contrast chart here." And I could say something similar when I'm reading a history text. These strategies are part of my content area reading repertoire. Should I eschew them because they aren't discipline specific?

No. Indeed, a significant amount of evidence suggests that content area reading strategies are effective, especially for students who struggle with reading comprehension (e.g., National Institute of Child Health and Human Development, 2000). These strategies don't seem to be as effectively taken up by schools, however, for a variety of reasons. One reason is that subject matter teachers have a packed curriculum and view the strategy as an add-on they are being asked to impose on that curriculum. They don't see how adding reading instruction will help. Remember

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1 that reading processes such as the use of strategies
2 should help students solve particular problems en-
3 countered in the text. They allow readers to learn
4 and think about the content in appropriate ways for
5 the subject matter. So, before teachers have students
6 use a particular strategy, they should ask three ques-
7 tions: (1) Does this strategy help my students under-
8 stand the subject matter discussed in the text? (2) Is
9 this strategy one that a disciplinary expert would find
10 reasonable? (3) How is the strategy helping students
11 meet the aims of a particular discipline?

12 In the case of a process diagram or a comparison/
13 contrast chart, experts in literature, history, and sci-
14 ence all discuss their use. For example, the chemists
15 in our study of the disciplinary literacy practices of
16 experts (Shanahan, Shanahan, and Misichia, 2011)
17 commonly drew and studied diagrams or other repre-
18 sentations of the ideas in the text and talked their way
19 through diagrams in written prose or verbal explana-
20 tions. They could articulate their disciplinary purpose
21 for this practice as well. For example, a chemist ex-
22 plained that, if he didn't know particular scientific
23 concepts, he tried to learn them rather than engage
24 in critique, and he knew that if he couldn't represent
25 a concept in several different formats (prose, picture,
26 formula), he hadn't really learned it.

27 Historians engage in corroboration—that is, they
28 look for a level of agreement across sources before de-
29 termining that a particular interpretation of history is
30 plausible. If disagreements exist, they take these into
31 account and weigh them in light of the author's per-
32 spective. For example, to determine if an interpreta-
33 tion of a conversation between John F. Kennedy and
34 Lyndon B. Johnson about the vice presidency is a
35 viable interpretation, a historian may look at the ac-
36 counts of those in the room at the time. If a supporter
37 of Robert Kennedy (who despised Johnson) had one
38 account of the conversation and a Johnson support-
39 er had a different interpretation, then the historian
40 would be suspicious of both. If the accounts agreed,
41 however, then the historian would have a higher level
42 of trust in their veracity. This practice requires com-
43 parison/contrast, so creating a comparison/contrast
44 chart of the accounts of people who have different
45 perspectives makes sense as a disciplinary strategy.

46 The point is, rather than leading with a strategy
47 and trying to impose it on a text, it helps to lead with
48 the text and the disciplinary purpose for reading (what
49 you want students to learn from the text). Sometimes,
50 you will need to adapt a known content area read-
51 ing strategy to be discipline specific. Other times,

thinking through what students need to get out of the
text will lead you to a discipline-specific process that
wouldn't be used in another context. For example,
when reading a document in history, it's important
to know aspects of the historian's practices of sourc-
ing and contextualization: who wrote the document
(and what kind of knowledge or expertise or perspec-
tive that person had), when the document was written
(and what was happening at that time), and who was
the intended audience. Students would be taught to
ask those questions of the text even before they read.
But that practice would not be something you would
do if you were reading a science or mathematics text-
book for the purpose of learning the information.

Question 3: What do I need to know to teach disciplinary literacy?

This question has no easy answer. The problem is
that reading specialists and coaches may not truly
understand the disciplines very well. They have been
focused on learning their *own* discipline—literacy and
literacy pedagogy. Middle and high school subject-
matter teachers may not know much about literacy,
and although they may know the *content* of their
disciplines, they may know only implicitly its literate
processes. Teacher candidates do take coursework in
their discipline, but they may not take courses that
teach them how experts create knowledge, communi-
cate it, and critique it. Even if they do, these practices
aren't usually characterized as literacy or discourse
practices, and so these candidates become teachers
without a full understanding of the literacy of their
own disciplines. Teaching the literate practices of
their discipline to their students is kind of like teach-
ing someone to drive a car. Adults may know how to
drive a car, but to teach it, they have to understand
it at another level, breaking down what has become
automatic into steps or distinct processes that can be
explicitly taught. The problem is that most adults are
never explicitly taught literacy processes in the first
place, unless they get a terminal degree such as a
PhD. Thus, the processes they use for reading and
writing have always been implicit rather than explicit.

Learning how to teach disciplinary literacy means
several things. For reading specialists and coaches, it
means helping subject matter teachers unpack the
perhaps implicit understandings about how experts
in their discipline engage in literacy and realize that
those practices are, indeed, literacy practices. It also
means that these literacy specialists and coaches must


listen to what subject matter teachers say. Subject matter teachers know how to read in their disciplines, and they know the kinds of information that are important for students to learn and think about if they are to be invited into the discipline. Together, literacy experts and subject matter teachers can figure out how to plan instruction that includes not only textbooks but the types of texts that are part of the discipline, and to let those texts dictate what discipline-based literate practices are taught.

Disciplinary literacy instruction likely won't happen without a true collaboration. For a discussion on the various collaborations that are possible for teacher candidates, see Conley, 2012. In this article, the author describes a secondary literacy course focused on literacy in the disciplines. The course asked students to demonstrate a full understanding of the literate practices in their discipline and to design discipline-based literacy instruction, but not without a significant collaboration with discipline-based mentor teachers and disciplinary experts.

Learning how to teach disciplinary literacy also means taking a good look at the Common Core State Standards (CCSS; National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). These standards value the distinct literacy practices of history/social studies and science and technical subjects in grades 6 through 12. They also emphasize the types of high-level thinking skills that are used by students who understand their disciplines (e.g., sourcing in history, translation in science, error-detection and logic in mathematics).

Question 4: What if texts are too difficult for my students to read?

The two biggest problems faced by subject matter teachers are that students have difficulty reading the texts in their classes and they don't want to read. Teachers often solve these problems by (a) removing the texts and telling students what they need to know (or showing them movies), (b) reading the texts to them, or (c) having only the best readers read the text aloud. Of course, these practices ease the immediate problem but cause a significant long-term

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one because students never learn how to read in that subject matter. How do teachers solve this problem in the long run? The truth is, even when teachers engage students in exploring answers to interesting and significant discipline-based problems, even when students are taught to engage in the discourse practices of their discipline, even when students are motivated and able to think critically about artifacts or short documents or maps or data representations, they can *still* shut down when confronted with textbook chapters or long, complex texts. It's no wonder—they have had no experience with these kinds of texts. Reading them requires persistence and focus.

What can be done? Again, there is no easy answer, but a combination of teaching strategies can help students build their persistence and ability to read complex texts. Here is a list of 10 strategies that I have devised with some of the teachers I have worked with.

1. Start with easier texts and build complexity and length over time.
2. Break up the reading of longer textbook chapters into smaller chunks and make these chunks longer as the year passes and students' capacity increases. It might be helpful to think about how runners train for a marathon: They vary short-, long-, and medium-distance runs. After a long run, they will do a short one before shooting up to an even longer run and then moving back to another shorter run. This kind of training builds capacity over time, and it may be a way to approach the reading of longer texts (although we need to engage in systematic studies of this conjecture).
3. Be explicit about your intentions to build persistence and capacity and explain why they are important. Celebrate students' accomplishments when they have read a text that is longer than they are used to.
4. Create a climate in which struggle with text is honored and a valued part of learning. Teachers can do this by modeling that struggle and recognizing and encouraging it in their students.
5. Provide instruction that helps students pay attention to the important parts of text, such as graphic organizers (claim/evidence charts) or annotation for disciplinary purposes.
6. Set purposes for reading that are authentic to a discipline, such as to determine what position

1 to take about a historical controversy, to ex-
2 plain a scientific or mathematical principle
3 to a lay audience, or to make a decision that
4 requires an understanding of the scientific or
5 mathematical principle.

- 6 7. Work carefully through significant passages
7 by modeling and then having students prac-
8 tice close reading of a text within a discipli-
9 nary lens. For example, in history, weigh word
10 choices in order to better understand an au-
11 thor's perspective on a historical event. In
12 chemistry, look for language that temporizes
13 or explains the extent of confidence one can
14 have that a reaction will occur, given a partic-
15 ular mix of chemicals. In mathematics, break
16 down the definition of a process and consider
17 the meaning of each word.
- 18 8. Before introducing a text to students, deter-
19 mine the key ideas and significant details,
20 those elements that illustrate craft and struc-
21 ture, and those ideas that can be integrated
22 within the text and across others in a text set.
23 These understandings of the text will help de-
24 termine the type of support students will need
25 to understand it. And the supports you provide
26 to students will make the reading of difficult
27 and long texts easier.
- 28 9. Foster students' collaborative efforts by teach-
29 ing them to work together respectfully to solve
30 comprehension problems and answer discipli-
31 nary questions. Indeed, students working
32 together can help one another extract discipli-
33 nary meaning from text. They won't do
34 that, however, unless they are shown how, by
35 modeling, group practice and discussion, and
36 significant feedback.
- 37 10. Refrain from telling students what is in the
38 texts they are reading in groups or independ-
39 ently. We teachers often get so excited about
40 our subject matter that, when students have
41 questions, we immediately answer them
42 rather than guiding students to come up with
43 their own answers. The rule here is to talk less
44 and listen more. It's important that students
45 feel ownership for their interpretations of text.

46 These 10 suggestions look easier to implement than
47 they really are, but unless we tackle the problem
48 of reading persistence with difficult text, then we
49 will fail at implementing the Common Core State
50 Standards, in which text complexity is central and
51 disciplinary practices are honored.

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In summary, the questions I've attempted to an-
swer are commonly asked by teachers. Even though
there are few easy answers, the rewards of moving
forward in the directions discussed are likely worth
it. Evidence is mounting that teaching students the
literate practices in the discipline increases aca-
demic achievement in those disciplines and in lit-
eracy. This evidence appears in history (De La Paz,
2005; Hynd-Shanahan, Holschuh, & Hubbard 2004;
Monte-Sano, 2011; Monte-Sano & De La Paz, 2012;
Reisman, 2012) and science (Greenleaf et al., 2009;
Moje, Sutherland, Solomon, & Vanderkerko, 2010;
Textual Tools Study Group, 2006.) Also, given the
need for implementation of CCSS, moving toward a
discipline-specific approach makes sense.

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