LITERACY LEADERSHIP BRIEF

# Content Area and Disciplinary Literacy

## Strategies and Frameworks

International Literacy Association | 2017

**T**he terms *content area literacy* and *disciplinary literacy*, though often conflated in literacy research and education policy contexts, refer to distinct approaches. Understanding what they mean and how they are best combined in classroom literacy instruction is critical for today's literacy professionals and policy advocates.

Consider these three scenarios: In history, high school students compare and contrast primary source documents to determine why Japanese internment occurred in the United States during World War II. In science, elementary students record and interpret the results from tests of solar ovens as they learn about heat transfer. In mathematics, teams of middle school students, each of which came to different solutions after reading a word problem, verbally explain and demonstrate how they arrived at their solutions.

Although these scenarios differ, they each underscore that literacy—including the interpretation and production of texts and representations—is vital to participation and learning in different academic disciplines. Content area literacy and disciplinary literacy are umbrella terms that describe two approaches to literacy instruction embedded within different subject areas or disciplines.

## Content Area Literacy

Under a content area literacy approach, students learn reading and writing processes that are common across disciplines. As part of content area literacy instruction, teachers explicitly model these processes, then provide opportunities for students to practice them independently and in small groups. This approach is based on the assumption that when students apply strategies for reading and writing challenging texts, they can more fully learn from and create texts in each discipline.

Under a content area literacy approach, students practice common strategies for two critical tasks.

1. *Interpreting texts*: Across disciplines, students can ask clarifying questions when they do not understand a part of a text, read headings or other text features to make predictions about a text's big ideas, summarize a passage, and engage in other comprehension strategies or word-analysis strategies.

    For instance, consider a high school student who does not initially remember the meaning of the term *transversal* on

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a mathematics quiz or the term *monochromatic* on a display board in his interior design class. In both cases, the student can break the vocabulary word into smaller parts (*trans*, *mono*), compare these parts to other familiar words (*transportation*, *monologue*), make inferences about the parts' meanings, and use these inferences to predict the meaning of the larger word.

2. *Composing and revising texts*: Across disciplines, students can brainstorm and organize initial ideas in visual, graphical, or written formats; they can read their work aloud to help them determine whether it makes sense and flows; and they can improve drafts through revising and editing after receiving specific feedback from their peers and their teachers.

    For instance, consider a middle school student tasked with writing a narrative in her English class and a lab report in her science class. In both cases, she can read the text aloud to herself, circle overused or general words, and replace them with more precise words.

Several studies, which have been conducted across multiple content areas, have demonstrated that content area literacy instruction can lead to positive outcomes for diverse students on measurements of content knowledge and literacy achievement. However, some studies have also indicated that an exclusive focus on common literacy strategies, without a concurrent emphasis on discipline-specific content and practices, does not produce optimal results in students' learning.

## Disciplinary Literacy

Under a disciplinary literacy approach, students use literacy to engage in goals and practices that are unique to each academic discipline. For instance, in the discipline of physical education, one goal is to maintain a healthy lifestyle, and physical activities are practices that help students to achieve this goal. In the discipline of engineering, one goal is to meet human needs such as clean drinking water, and engineering design processes are practices that help students to achieve this goal. As part of disciplinary literacy instruction, students learn how to use texts—such as exercise instructions or labeled drawings of a water filter—in the service of disciplinary goals and in the context of disciplinary practices.

*An exclusive focus on common literacy strategies, without a concurrent emphasis on discipline-specific content and practices, does not produce optimal results in student's learning.*

In this context, students gain practice with interpreting texts like a disciplinary expert would: They view and discuss exemplar texts from discipline-specific genres prior to composing their own texts from these genres, and they evaluate and revise their writing on the basis of how well it meets discipline-specific criteria. This approach is based on the assumption that basic reading and writing processes do not adequately prepare students for advanced participation in each discipline.

Under a disciplinary literacy approach, students use discipline-specific frameworks for the same two critical tasks:

1. *Interpreting texts*: In mathematics class, students might evaluate and critique solutions like a mathematician would; in history class, students might corroborate evidence across sources like a historian would; in a nutrition class, students might compare and contrast food labels like a nutritionist would; and so forth in each discipline.

   As students learn to read and evaluate texts like somebody in their discipline would, they can also engage in critique of these texts. For instance, in science class, students might use their knowledge of scientific methods and scientific principles to critique an online text that advertises a dubious product that claims miraculous "research-based" results.

2. *Composing and revising texts*: What constitutes "good writing" in one discipline may not be considered "good writing" in another. For instance, an English teacher might expect his students' poems to meet one set of criteria (e.g., inclusion of metaphors), whereas a horticulture teacher might expect her students to create plant taxonomies that meet an entirely different set of criteria (e.g., inclusion of superordinate and subordinate categories).

   Students can therefore learn the features of common genres within each discipline, and they can evaluate and revise their own texts according to discipline-specific criteria. Moreover, students can write claims that meet standards of evidence specific to each discipline.

Several studies conducted across multiple content areas have demonstrated that disciplinary literacy instruction can lead to positive outcomes for diverse students on measurements of content knowledge and literacy achievement. However, some scholars have cautioned that this approach alone does not

adequately support students who experience difficulties with reading or writing. They asserted that students also deserve explicit instruction on basic reading and writing processes in each discipline.

## Combining Both Approaches in Practice

Content area literacy and disciplinary literacy are not mutually exclusive approaches to literacy instruction. On the contrary, students can practice common literacy strategies, in addition to using more discipline-specific frameworks and practices, as they read and write texts. Furthermore, literacy instruction works best when teachers rigorously connect educational standards to their students' interests, backgrounds, home languages, and families. The following Table, which is not intended to be exhaustive, offers possible examples of how students can use both generic literacy strategies and discipline-specific interpretive frameworks to support their participation in different disciplines.

All students deserve high-quality literacy instruction that prepares them for further participation in the disciplines while simultaneously illustrating the relevance of these disciplines for their lives and acknowledging the wealth of knowledge and experiences that students already bring to the learning process. To this end, literacy instruction in the disciplines can emphasize reading and writing processes, disciplinary practices, *and* students' interests and experiences in order to maximize positive outcomes for diverse students.

*Content area literacy and disciplinary literacy are not mutually exclusive approaches to literacy instruction.*

**TABLE**

## Sample Combination Approaches Using Literacy Strategies and Disciplinary Literacy Frameworks

| Discipline | Example of Anchoring Disciplinary Activity | Examples of Representations or Texts That Support the Activity | Example of Embedded Content Area Literacy Instruction | Example of Embedded Disciplinary Literacy Instruction |
|---|---|---|---|---|
| Agriculture | High school students conduct research that compares and contrasts the effects of different fertilization plans on plants or crops in their neighborhood or community. | • Relevant informational texts about specific plants and their fertilization needs<br>• Systematic records of each fertilizing plan's effects<br>• Summary of students' results and conclusions | Students use comprehension strategies, such as asking clarification questions about information that is still unclear, while reading informational texts about plants. | Students evaluate exemplar texts, such as research reports by previous students, to determine whether the study design enabled the author to draw valid conclusions. |
| Engineering | Middle school students redesign their school's parking lot to decrease likelihood of cars hitting student pedestrians. | • Aerial photograph of parking lot<br>• Written statements from school board members, students, and parents (including in students' home languages) regarding what they would like to see in the new parking lot<br>• Parking lot regulations | Students annotate statements by underlining important information. They summarize this information after comparing and contrasting what different stakeholders want. | Students annotate statements and regulations by identifying the implicit and explicit criteria and constraints that their new parking lot design must meet and writing these criteria and constraints in the margins of the texts. |
| English Language Arts | High school students use rhetorical devices when creating a public service announcement (PSA) to encourage people to take action on an issue. | • Photographs, videos, or other visual/aural representations of the topic of the PSA<br>• Examples of PSAs | Students use a basic graphic organizer, such as a storyboard, to record and organize their initial ideas. | While viewing model PSAs, students identify and evaluate how their creators used particular forms of language, images, or sounds to appeal to intended audiences. |
| History | High school students use primary and secondary sources to explain why and how Trump-era nationalism gained prominence in the United States. | • Primary source documents, such as speech transcripts and political cartoons from different perspectives<br>• Secondary source documents, such as political analyses | Students create a graphic organizer, such as a bubble map, as a prewriting activity that helps them to place evidence under specific claims. | For each reading, students discuss guiding questions that emphasize the context in which the text was created or delivered, the perspective of the author, and the relationship between claim and evidence. |
| Mathematics | Middle school students help local farmers determine how to more efficiently irrigate square patches of land using pivot (circular) sprinklers. | • Word problem or description of the situation<br>• Aerial photographs of local farms<br>• Definitions and formulas related to area of circles and squares<br>• Students' report to local farmers | Students revise drafts of their report to farmers on the basis of teacher feedback regarding clarity and accuracy of terms (e.g., radius). | With teacher guidance and peer support, students annotate photographs of farms with labeled circles, squares, and suggested equations. |

*(continued)*

**TABLE**

## Sample Combination Approaches Using Literacy Strategies and Disciplinary Literacy Frameworks (Cont.)

| Discipline | Example of Anchoring Disciplinary Activity | Examples of Representations or Texts That Support the Activity | Example of Embedded Content Area Literacy Instruction | Example of Embedded Disciplinary Literacy Instruction |
|---|---|---|---|---|
| Performing Arts | Middle school students coauthor and perform dramatic scripts that illustrate problems they face in their lives, such as bullying or discrimination. | • Students' drawings of problems faced in their lives (a prewriting exercise)<br>• Students' scripts and performances | Students read and perform early drafts of their scripts aloud, and they revise the scripts on the basis of their own evaluations or peer comments. | Students view previous scripts and discuss features of this discipline-specific genre prior to creating their own play scripts. |
| Physical Education and Health | Elementary students set goals for personal physical activity, measure their progress toward those goals using devices such as pedometers or pedometer apps, and reflect on their progress toward their goals. | • Students' written goals<br>• Students' logs of their daily step counts<br>• Students' written reflections on progress toward goals and possible modifications of those goals | Students break down the word *pedometer* by identifying the meaning of individual word parts (e.g., *meter* relates to measurement and *ped* relates to having a foot). They use this information to infer what a pedometer does. | Students use principles from their physical education or health class, such as the need to respect their personal physical strengths and constraints, to realistically evaluate their goals and their progress. |
| Science | When presented with different graphs, elementary students write an argument regarding which graph most accurately represents how the temperature will change when ice is heated to steam. | • Informational texts about thermal energy and states of matter<br>• Competing graphs that purportedly represent the temperatures at which ice turns into water and then into steam<br>• Students' arguments | Students use cognates, or words that have the same linguistic derivation as other words, from their home languages to make inferences about unfamiliar words in a second language (e.g., *materia* in Spanish and *matter* in English). | The teacher provides students with guiding questions that encourage them to observe, compare, analyze, and explain the graphs. Students use these guiding questions, plus questions of their own, when discussing the graphs in pairs. |

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