
Promoting Students' Engagement with Disciplinary Texts as Inclusive Teaching Practice

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Abstract

This paper highlights the importance of disciplinary literacy in the acquisition of academic knowledge and identifies the teaching of disciplinary literacy as an inclusive teaching practice that supports equitable learning opportunities in the postsecondary context. The authors propose that the teaching of disciplinary literacy can be productively integrated with the teaching of disciplinary content to enhance students' active engagement with core disciplinary concepts as students are progressively socialized into the communities of their disciplines. To facilitate this type of teaching, they describe a three-stage reading framework that can be applied to support students' reading of disciplinary texts in the university setting and provide an array of practical strategies that can be applied at each stage. A sample activity that can be adapted to be used in a variety of disciplines is given for each stage.

Key words: Disciplinary literacy, Inclusive teaching, Equity, Reading strategies, Literacy

Reading is a primary vehicle for imparting the content of our disciplines; however, instructors commonly note that students have difficulty understanding required course readings. If it is difficult for students to engage with complex disciplinary texts, why is it difficult, and how might instructors design learning to support students in reading discipline-specific texts? This paper aims to address these questions and begins by discussing some of the factors at play in the reading of complex disciplinary texts in the higher education context. A framework composed of three stages of reading – *before reading, while reading, and after reading* (Cook, 1989; Neal & Langer, 1992; Grabe & Stoller, 2001) – is then proposed as a means of supporting students' reading of disciplinary texts in their university courses. Strategies that

can be productively deployed by disciplinary instructors during each of the three stages are provided, along with examples of how the strategy can be applied in the postsecondary context.

Although the *before, while, and after reading* stages of reading support have been the object of research and implementation for some time in fields such as education, applied linguistics and second language acquisition, this tripartite approach to engaging students in reading disciplinary texts is not, to our knowledge, widely practiced in disciplinary teaching in higher education. This article introduces some ways that these methods can be applied to enhance students' understanding of complex disciplinary texts. In so doing, it makes two

distinct points: the first is that disciplinary faculty are particularly qualified to teach students how to read disciplinary texts, and the second is that explicit teaching of disciplinary reading can and should be included in disciplinary content courses. Furthermore, we propose that supporting students' disciplinary literacy is an inclusive teaching practice that is key to providing excellent learning opportunities for students, particularly those who have been historically underserved in the US context.

Reading Disciplinary Texts

Recent understandings of reading, as discussed in the literature, view the process of reading as socially-situated and contextual in ways that are not always transparent to students. Baker and colleagues (2019) note that reading, and in particular, the reading of disciplinary content, is a complex undertaking for students, requiring that they bring considerable intellectual capital to the task, including prior knowledge of the topic, as well as detailed understandings of the context in which texts are embedded. David Bartholomae (1986, 2005), in his now-classic article, notes that students entering the university are faced with the formidable task of learning, with some degree of mastery, the multitude of ways that academics interact with, produce and communicate about the knowledge of their disciplines. In short, students have to "invent the university" by learning the discourse practices that reflect each discipline's values and define each discipline's discourse community. Although Bartholomae focuses his discussion on disciplinary writing, his observations are equally true for disciplinary reading. Schiro (2012) echoes Bartholomae: "As a community, each discipline has a tradition and a history; a heritage of literature and artifacts; a specialized language, grammar and logic for expression of ideas; a communications network; a valuation and affective stance; and territorial possession of a particular set

of concepts, beliefs, and knowledge" (p. 27). Given the complexity of disciplinary texts and the disciplinary knowledge, values, contexts and constructs embedded within them, it is not surprising that students encounter challenges when they set out to read the highly-specialized scholarship of the disciplinary fields they are tasked to engage with on a daily basis at the university. The difficulty of the task is magnified by the fact that many students come to university unprepared to engage in literacy practices at the level expected in disciplinary classrooms (Porter, 2018).

Deep vs. Surface Reading

To successfully navigate disciplinary texts, students must engage in so-called "deep reading." Hermida (2009) notes that reading deeply engages higher-order cognition (e.g., analysis, synthesis or metacognition), as students integrate prior knowledge with new information presented in the text, modify and add to existing knowledge structures, and apply subsequent understandings to other tasks. In surface reading, by contrast, readers engage superficially with the text, accepting the author's claims rather than questioning and evaluating them; they see writing as factual and isolated, rather than subject to critical assessment and part of larger discussions within the discipline (Hermida, 2009). This kind of reading does little to support students' growth from relative novices to competent consumers of literature, and later, to emerging scholars. Hermida further notes that upon arriving at university, many students have not yet developed the skills required for deep reading, and that these skills must be taught. Indeed, the difficulty of the task that students face as they begin their studies is only compounded by the fact that they often are expected to master the discourses of many disciplines in any given academic term. These disciplines may differ markedly from one another in their epistemic orientations and writing conventions.

Teaching disciplinary reading: A form of inclusive teaching

When students enter the university, they enter into an extended period of intensive study designed to develop skills and knowledge in their intended field. As such, they are engaged in a process of apprenticeship, whereby they are socialized into the practices of their discipline; in short, they are expected to deeply internalize the cognitive and social practices of their discipline. It is through the successful implementation of this ability to learn, think, analyze, do research, and act like an expert in the discipline that students begin to “be” a chemist, an engineer, a sociologist or an artist.

Learning how to substantively and meaningfully deploy the reading and writing practices of their discipline is therefore key to students’ intellectual, academic, and career development during postsecondary education. Yet, reading instruction at the university level has traditionally been viewed as “basic skills teaching and generic, simulated learning skills instruction” (Stahl & Armstrong, 2018, p. 60). However, as Baker and colleagues (2019) note, reading is a situated practice, involving “a complex repertoire of practices that are text-type and context dependent, essentially concerned with meaning making” (p. 149).

The notion of reading as complex and discipline-specific points to the importance of explicitly discussing and teaching disciplinary reading to students *in the context of their studies*. This is especially true in light of changes in student demographics in recent decades. In coming years, students from historically underrepresented groups will make up a majority of students in institutions of higher education. Yet, in spite of growing diversity on college campuses, gaps in educational attainment persist (American Association of Colleges and Universities [AAC&U], 2015).

Reading and writing hold a place of particular importance in the repertoire of skills that students can use to gain access to disciplinary knowledge; however, Baker and colleagues (2019) have written that “the transformative potential of reading as a key literacy practice alongside writing” is only now being recognized, noting that “[t]here is a problematic silence in the literature about the role of reading in facilitating meaningful epistemic access to the institution of higher education” (p. 145).

It is precisely this epistemic access that has historically been viewed as key to providing opportunities for social and economic mobility in the US and elsewhere (AAC&U, 2015; Baker et al., 2019; Labaree, 1997). While access to knowledge is no doubt important, disciplinary literacy does more than simply allow students to secure jobs and achieve economic mobility; it also gives them access to membership in the discipline itself. As White and Lowenthal (2011) point out, the ability to skillfully deploy the literacy practices of a given community is often a requirement for membership in a community of practice, in this case, a disciplinary community. Teaching disciplinary literacy allows students, as emerging scholars, to engage critically with the discipline and, as their membership progresses, participate in the shaping of the discipline’s knowledge, norms and values (Moje, 2008; White & Lowenthal, 2011). In this way, teaching that promotes disciplinary literacy is a powerful force in making the university more inclusive, in particular for groups that have traditionally been excluded from full participation in the academy. Moje (2008) takes the idea of disciplinary literacy as an inclusive practice to a larger scale, noting that disciplinary literacy gives students access to the disciplinary skills and knowledge that allow them to participate actively in the much larger social, professional, political and economic structures that are crucial to individuals’ ability to participate actively in democracy and enact social change.

It seems clear that explicit instruction in the skills required to read complex disciplinary texts is both necessary and desirable. Disciplinary literacy opens access to disciplinary knowledge and the disciplinary communities that produce that knowledge, and this access is a driver for students' intellectual, academic and professional development. Therefore, there is little doubt that the intentional teaching of disciplinary literacy as part of disciplinary content is an inclusive teaching practice that supports equitable learning opportunities for students in US postsecondary education, a population which is increasingly diverse.

Disciplinary faculty have not traditionally been called upon to teach the literacy practices of their disciplines; however, as experts in their disciplines, they are well-positioned to develop students' capacity to meaningfully engage with disciplinary texts by sharing the way faculty themselves, as disciplinary experts, read and process texts. Indeed, Maleki and Heerman, as early as 1992, put forth the idea that disciplinary instructors do not need to become reading instructors, but they can help improve their students' ability to engage with texts by adopting a "mental framework" for content reading. This paper introduces one such framework for supporting students' readings of complex disciplinary texts. It is a framework that can be used across disciplines, but when used in disciplinary instruction by a disciplinary expert – the faculty member – it allows for rich discussions of the intellectual values, norms and expectations of the discipline, which is one of the goals of disciplinary literacy instruction (Shanahan & Shanahan, 2008). While some faculty may be unaccustomed to sharing their knowledge of the ways experts in their discipline read and write texts, there are a number of ways faculty can begin to engage their students in discussions of the discourse of their fields. These methods permit the texts to be fully resourced for their potential to enhance learning, both by becoming effective vehicles for student learning, and by engaging

students with the discourse practices that define the discipline. From the start, we wish to acknowledge that many of these strategies may be considered general reading strategies, whereas others are more specifically aimed at teaching students the unique ways that experts approach reading the texts of a specific discipline. We see the combining of such strategies as appropriate, taking the view, along with Armstrong and Lampi (2017), that general strategy instruction has value in disciplinary classes, since such strategies help students navigate the texts in the first instance – early in their disciplinary courses – before they have had the opportunity to learn much content. This allows students to acquire a baseline of knowledge in the field, which Moje (2008) argues is a necessary prerequisite for engaging in the deeper metacognitive work of understanding the values, ways of thinking, and discourse practices of the discipline that are a key part of disciplinary literacy. The remainder of this paper explores these methods by applying a framework for reading instruction, heretofore used in adult learning, second language acquisition and reading instruction, to the postsecondary disciplinary context. An example of how these strategies can be applied is given in each section.

Promoting disciplinary reading: A three-stage framework

Grabe and Stoller (2001) and others (Cook, 1989; Neal & Langer, 1992) propose a three-stage framework for building students' ability to interact meaningfully with texts in ways that promote learning. While this framework comes out of the research into the reading processes of second language learners and reading instruction, in general, their *before, while and after reading* framework is equally applicable to the fostering of disciplinary literacy in a postsecondary context.

This framework is by no means the only way that the teaching of reading has been

approached at the postsecondary level. A number of articles have proposed viable and effective ways of teaching reading that can help students acquire disciplinary literacy (see, for example, Armstrong & Lampi, 2017; Anderson & Kim, 2011; and Horning, 2007); however, what the current model has to offer is a comprehensive, multi-phase framework that scaffolds students' understanding of the text through all stages of the learning process – prior to interacting with the text, while interacting with it and after interacting with it – in ways that help students not only understand the text, but also go beyond the text to apply what they have learned and construct new understandings built upon prior ones. The framework is also general enough to be applicable to all disciplines, while offering disciplinary faculty opportunities to customize activities so that students can learn specific disciplinary practices.

The next three sections of this article present and describe suggestions for each stage of the reading process that postsecondary educators, specifically those who teach disciplinary content (e.g., professors, lecturers and graduate student instructors), can deploy. Many of the suggestions involve the instructor's facilitating interaction among students, as engaging in interactions with others is a key part of motivating and guiding students through the reading of complex disciplinary texts (Maleki & Heerman, 1992). An example of an assignment that enacts a sample strategy follows each section in Figures 1, 2, and 3. Each example unpacks the purpose, design, and function of the assignment to provide context and provides recommended steps for implementation.

Strategies to Increase Engagement Before Reading | Stage 1

To fully engage readers, it is important to support students during all three stages of the reading process: *before, while and after* reading the text. Before-reading activities are

designed to prepare students to read the text. They do this in a variety of ways, for example, by activating students' background knowledge of the content to be discussed in the readings, as well as by increasing students' background knowledge when needed. Indeed, both skilled and unskilled readers may need to acquire some background information before learning a subject (Maleki & Heerman, 1992). Before-reading activities can also stimulate interest in the topic, uncover students' misconceptions about the topic, and help students to better understand the structure of the text, as well as introduce students to disciplinary values. A final benefit is that such activities can be used to introduce disciplinary terminology with which students may not be familiar.

Before students read a text, instructors can guide students as they find ways to build connections with prior knowledge or experiences, establish the purpose of the writer, preview the text, or make predictions. Each of these strategies can help prepare students to read the text and engage more meaningfully with the concepts presented in it. Faculty can deploy a number of before-reading strategies to help support students' successful engagement with complex disciplinary texts, though it is not necessary to use all of them. Often one or two are sufficient for a given text. Some of these are presented below.

Use a concept map. Ask students to generate a concept map of all that they already know about a given topic and have them discuss their maps with a partner, adding their partner's ideas to their own maps as they talk. This is particularly helpful for activating students' prior knowledge, which provides the basis for the structures that students will elaborate when they begin reading the text. In a debrief session, the instructor can add disciplinary concepts and explanations into the discussion of students' ideas about the text.

Create an anticipation guide. Ask students to agree or disagree with a series of statements related to an article they will soon read. Give students one to two minutes to mark their responses and then two to three more minutes to discuss their responses with a partner. This activates students' background knowledge about the topic and is a simple way to motivate interest in the reading. After students have discussed the statements, the instructor can elicit students' responses to the statements and stimulate discussion of disciplinary concepts and values as part of the activity. An example of an anticipation guide is given in Figure 1 on page 13.

Add to what they know. Lead a short discussion, eliciting student input about the topic or concept and noting students' contributions on the document camera, blackboard, or computer screen. As the discussion proceeds, add and explain additional related disciplinary concepts and ideas that students will need to understand in order to engage meaningfully with the reading they are about to do. Using visuals (e.g., photos, diagrams) in these discussions can amplify meaning for students. The ideas contributed by the instructor may target specific disciplinary knowledge, but the net may be cast more broadly, incorporating discussion of larger societal and cultural concepts. This can be useful in classes that have large numbers of international students; however, in the multicultural context of US higher education, it can be helpful for all students.

Fill in gaps using shorter texts. Have students do a short and accessible reading (e.g., a news article or a summary of a primary source) or watch a video that fills in knowledge gaps with basic concepts, constructs, or frameworks that will help students understand more complex readings that require a higher level of background knowledge.

Highlight applicability. Students may encounter difficulties with determining when their prior knowledge applies to the new material they are learning, and when it is not appropriate or helpful to do so. Ambrose et al. (2010) recommend identifying for students the situations where using prior knowledge is applicable, and where it is not. For example, in a sociolinguistics class, the instructor might explain to students that evaluating language as "correct" or "incorrect," which may be an orientation to their own language use that they learned during the course of their experience in school, is not as interesting or useful in sociolinguistics as studying the way people actually use language.

Explain to students the reading's rhetorical context. Bean (2011) notes that novice readers do not, on their own, understand how a given text is situated in the larger conversation within the discipline, and this can cause difficulty in understanding disciplinary texts. Bean (2011) recommends that instructors "set the stage" for readings. To do this, the instructor might explain how the text fits into the literature in the field, and how the text has been received by scholars in the field, as well as discuss the way the article has impacted the field and subsequent research.

Preview the text for audience and purpose indicators. Literacy scholars have long known that understanding the audience and purposes of authors enhances students' comprehension of complex texts. Bean (2011, p. 181) also recommends teaching students to approach new texts by asking the following questions:

- Who is the author?
- Who is the intended audience?
- What occasion prompted this writing?
- What is the author's purpose?

Teaching students to attend to considerations of audience and purpose, as well as to

recognize strategies employed by authors in a given discipline to accomplish rhetorical goals, can help students better understand disciplinary texts. As students learn how disciplinary experts construct texts with goals in mind, in relation to who is reading them and for what purpose, students also begin to learn the particular habits of mind that are involved in “thinking like a sociologist,” or “thinking like an engineer.” This, as much as learning the content of the discipline, is key to students’ success in classes and in their later academic and career paths.

Model an article analysis. Students may not immediately perceive the structure of disciplinary texts as they try to navigate unfamiliar concepts, arguments and terminology. Instructors can explicitly draw students’ attention to how these textual elements are deployed in their discipline by modeling an article analysis. To do so, an instructor might go over the structure and purpose of each part of a sample article by pointing out the article’s sections, as well as the forms of evidence, key phrases, variables, and/or figures on which to focus. Later, it can be helpful to invite students to do an article analysis on their own, so they can practice identifying these features independently. We have seen a version of this done effectively by a professor in a Constitutional Law class at our institution. The analysis is done in the form of a video in which he records himself talking through an article analysis. The video tool he uses creates a split screen so that students can see the text and the annotations he is making on the text on one side of the screen, while watching and listening to him as he discusses the disciplinary aspects of the text on the other side of the screen. Because of the format, students can watch the video outside of class prior to reading the text. Although it is not necessary to use video to do an article analysis, this is a particularly innovative way to increase

students’ access to this kind of disciplinary support by allowing them to watch outside of class and re-watch as needed.¹

Provide scaffolds for the reading process.

Students who have not yet developed effective reading processes for themselves can benefit from instructors who discuss the reading process in class. Explicitly explain to students the *before reading*, *while reading*, and *after reading* framework and engage them in discussions of their own reading processes. Teach them the skills in this article and tell them they can apply them to other reading situations. This provides students with a metacognitive resource for improving their own reading process. As Armstrong and Lampi (2017) note, developing students’ metacognition through such scaffolds helps them to adopt the disciplinary habits of mind that will allow them to “transition into a disciplinary mindset” (p. 7).

Practice inclusive teaching. Students may have difficulty understanding concepts, orientations, frameworks and lived experiences with which they are not familiar, but that they encounter through disciplinary readings. Instructors can support students’ development of a wider knowledge base from which to evaluate texts by consistently bringing diverse perspectives into the classroom through classroom dialogues, assignments, and/or materials, thus exposing students from all races, genders, gender identities, and other identity groups to diverse lived experiences and beliefs. This will also allow students to see themselves in the content of the course, which is key to establishing an equitable and inclusive learning environment (Kachani, Ross & Irvin, 2020).

Preview vocabulary in context. While most of these strategies take a “top down” (ideas and concepts first) approach to preparing students to read texts, “bottom up” (text-level) strategies

1. Many thanks to Professor Mark Verbitsky at UC Davis for permission to use this example.

may be particularly helpful to students who encounter difficulties with reading at the sentence or word level. To help students make sense of disciplinary terminology, give students four to five stand-alone sentences that show disciplinary terms in a context where their meaning is transparent. Then, have students come up with their own definitions (which may be preliminary guesses) of the terms as homework, and later discuss their responses for three to four minutes with a partner in class. In a subsequent class discussion, talk about the nuances in meaning of various disciplinary terms as they are used in the field and explain how disciplinary experts' values and ways of knowing are reflected in the language used in disciplinary texts.

Strategies to Increase Engagement While Reading | Stage 2

While-reading activities support students' active engagement with the text, helping them to navigate unfamiliar topics, rhetorical conventions, and terminology. While-reading activities support students in understanding key disciplinary concepts, as well as learning to distinguish between central ideas and supporting details, asking questions about key points in the reading, identifying the writer's assumptions, and analyzing content, as well as argument structure.

Research shows that good readers are active readers. Duke and Pearson (2009) note that proficient readers establish goals for reading; they monitor and evaluate their own reading processes in an ongoing manner to assess the extent to which their reading process helps them to achieve their goals; they vary their reading process according to their purpose; they predict content before they read it; and they "construct, revise, and question the meanings they make as they read" (p. 107). According to Bean (2011), argument structure, rhetoric, status of background knowledge, and language may all provide challenges to students as they make their way through a

text. Instructors might consider the following suggestions to support students during the *while reading* stage.

Spend time reading and discussing in class.

Have students occasionally read a short passage or section from an article while in class and have a small group/pair discussion of the reading afterward. This will signal to students that you value reading and expect them to engage fully with required course texts.

Model and assign annotation. Show students how you annotate texts when you read them and design at least one assignment early in the term that requires students to annotate a reading by writing questions, comments, and reactions in the margins of a text. Hobson (2004) notes that modeling the process of annotating a text by a disciplinary expert (the instructor) demonstrates the process which experts apply while engaging in complex reading in their discipline. This models the types of practices that are constitutive of the deep reading that is required for sustained intellectual engagement with disciplinary texts and concepts.

Provide structured handouts and graphic organizers. Providing worksheets or templates that students fill out while reading and then submit for a binary grade (e.g., "Completed" or "Not Completed") can both motivate students to do the reading and promote students' ability to read complex disciplinary texts without requiring the instructor to do large amounts of grading. A simple handout with questions that lead students through the reading can function as a reading guide. Another type of handout is a graphic organizer (e.g., a Venn Diagram or Process Flow diagram) that corresponds to the conceptual or argument structures in the readings that students can fill out and turn in. To help students understand how the argument structures reflect disciplinary norms and values, the instructor can discuss with students why the author uses a particular argument structure

and point out how the structure is represented in the organizer. Once students have grown accustomed to the graphic organizer as a reading strategy, they can be asked to create their own graphic organizers to represent the article's content. Activities such as these not only can help ensure that students do the reading (Hobson, 2004), but also can provide students with the support they need as apprentices in the discipline to understand the content and argumentation of the disciplinary community that has created the texts they are reading.

Assign reading journals or structured reading reports to be done immediately upon reading. Having students respond to the article they have just read by keeping a reading journal can help students interact meaningfully with the text by writing about their reactions to and questions about the article. Etkina and Ehrenfeld (2000) found that having students write structured reading reports about an article had positive impacts on student metacognition and learning, echoing Newton's (1991) finding that having students write reading journals increased students' metacognitive awareness, a key factor in student learning. When prompts for these journals engage students in thinking about the disciplinary context of which the articles are a part, disciplinary literacy is advanced.

Encourage students to use reading strategies while reading. Even a brief mention of reading as a strategic process can help students focus on readings and read more effectively in a given discipline. Hobson (2004) recommends that instructors teach reading strategies overtly. Explaining to students the advantages of strategies such as previewing the text, reading for the gist, paraphrasing, and using context to increase understanding can help students make sense of the reading task and make reading complex texts a more manageable process. Although faculty can mention reading strategies before students

read, reminders about reading strategies can be part of students' experience while they read if the instructor includes questions or notes about strategies in reading guides that students fill out while they read.

Incorporate reading into the classroom, using jigsaw reading with peer instruction. In jigsaw reading with peer instruction activities, students read portions of an article (or different articles) and complete questions or a reading guide about the article's content (jigsaw reading). They then come to class and share what they read with a partner or small group composed of people who have all read different texts (peer instruction). This gives students the opportunity to articulate what they have read in their own words in a meaningful way by teaching it to their peers, who may not have yet been exposed to the reading. For a more explicit description of this jigsaw strategy via example, see Figure 2 on pages 14–15.

Encourage annotation of complex sentences. For students who have trouble decoding the complex sentence structure often found in scholarly articles, encourage them to thoughtfully read and re-read difficult sentences and rewrite ideas in their own words when they encounter difficult syntax. Encouraging students who experience trouble decoding complex syntax to spend some time concentrating on a single problem sentence can help them better understand the structures they find difficult. (Fillmore & Fillmore, 2012).

Strategies to Increase Engagement After Reading | Stage 3

Once students have read through the entire text and have engaged with it using some of the strategies presented above, instructors can continue to support students' engagement with the text during the *after reading* stage. After-reading activities invite students to respond to, explore, and apply the information they've learned. The application function of after-reading activities asks students to use

the information they've learned and apply it to other related disciplinary tasks. These tasks can be embedded within the course context (e.g., students complete a research paper or write a text-type common to the discipline) or applied outside of the course to the disciplinary field. Such external applications often engage students in authentic tasks similar to those disciplinary experts engage in when interacting with real audiences. Students are thus provided with opportunities to integrate new knowledge with their existing knowledge, while learning information and skills they can transfer to new contexts.

After-reading tasks create the types of learning opportunities (e.g., extending, connecting, and applying knowledge) that help students meet the learning outcomes for their courses (Walqui & van Lier, 2010). In addition, the strategies associated with this stage align well with approaches to teaching that emphasize integrative learning. In integrative learning, students are transformed into "integrative thinkers who can see connections in seemingly disparate information and draw on a wide range of knowledge to make decisions" (AAC&U, 2002, p. 21). Acquiring disciplinary literacy can be seen as a necessary step in building the disciplinary understandings that help students accomplish a central goal of integrative learning: formulating integrated solutions to the complex problems that are common in the world today (Huber, Hutchings & Gale, 2005).

This section lists several learning activities and educative assessments that invite students to extend their understandings of texts and/or apply the information they've learned to novel contexts. Note that students do not necessarily complete all of the work done for these activities in class. Students can read the text itself and complete accompanying tasks as homework. Students then interact around the readings and tasks when they come to class.

Assignments that explicitly connect to the readings. Create assignments that require students to integrate information from the readings and cite sources. The classic example is the research paper, but others include debates (see below for a discussion of this strategy), critiques, reader responses that integrate quotes or paraphrases from the articles, and comparative summaries of two or more readings. To demonstrate disciplinary thinking around such tasks, the instructor can provide a model of the text students will write. The instructor can then explain, via a "think-aloud," the ways that experts in the discipline would approach the task, while simultaneously pointing out features of the model text that reflect such disciplinary thinking.

Assignments that encourage students to make connections to current topics. One way that students can extend the knowledge gained from a disciplinary reading is to use the information from the reading to analyze a contemporary or current topic. To provide a practical example, students might engage in small-group discussions about a current event that exemplifies the topics they've been reading about and, in groups, complete a Double-entry Chart that prompts them to articulate how the concepts presented in the reading play out in the current event or situation. For an example of a Double-entry Chart, see Figure 3 on pages 16–17.

Similar to the activity above, students look for current events or authentic situations that exemplify the topics they've been reading about and explain in a short analytical writing assignment how the concepts presented in a reading are at work in the current event. Connections between the reading and the event/situation are articulated in an explicit way, and students are instructed to integrate information from the course readings, using discipline-specific citation conventions. The Double-entry Chart can serve as a scaffolded pre-writing assignment for this analytical writing activity.

Small group debates. Students engage in small-group debates (two-person teams in groups of four) on a question related to the reading. Students are awarded points each time they integrate a quote or paraphrase from the reading to support their argument. Students “claim” their own points by marking them down as they speak, though members of the opposite team can contest a point by stopping play to consult the reading. (This activity works best in classes with fewer than 30 students, where the instructor can observe and facilitate).

Mini poster presentations. Assigned to small groups of three or four, students read different articles on the same topic and then create mini poster presentations summarizing their readings. Once in their groups, each student orally summarizes their reading and explains their reactions to the reading. Afterwards, students can compare and contrast the readings’ treatment of the topic in a group discussion.

Scenario-based disciplinary writing. Students write an advice letter, recommendations, or a report, acting as if they are professionals in the discipline, and integrate information from the reading to support the advice they are giving. This works well when the instructor sets up a fictional scenario that is authentic to the discipline and has students respond as if they were an expert in the discipline. They can then integrate information from the readings into their writing, using appropriate citations. This can be done as group work, as well as individually. We have seen this strategy used productively in a large-enrollment (250+ students) Human Development class taught by a professor at our institution. In this learning activity, students write their text collaboratively, in class, with each group of four students using a Google Document to write their texts.² To draw students’ attention to disciplinary values that would guide the writing of such a text, the

instructor can analyze a model of such a text with the class, discussing the ways an expert in the discipline would write it. Or, the instructor can provide feedback that explicitly comments on aspects of the text that should reflect disciplinary orientations to the task.

Authentic professional texts. Students produce an authentic text (ideally, one that is used in the professional field of their discipline), integrating information from the readings and using appropriate citation. An example of this type of text is a blog post like the one *Entomology Today*, a project of the Entomological Society of America (ESA), solicits on their website:

Writing for *Entomology Today* can be a great opportunity to show off your entomology expertise, hone your general-audience communication skills, and earn a little public recognition. Blog post topics can range from covering new research to answering a common question about an insect to interviewing an entomologist about their career...(The Entomological Society of America, n.d., para. 2).

Other authentic texts students may be asked to write include letters to the editor of a journal, a short white paper, an executive summary, a comparative summary of two research articles, or a critical review. In some cases, it may be possible for students to submit their work to an online publication or to the university newspaper. These authentic texts, which resemble texts written by experts in the discipline, give students an authentic writing task that requires them to integrate what they have read into a written text in a way that is lower-stakes than a research paper, for example, while demonstrating their learning and giving them practice with disciplinary writing.

2. Many thanks to Professor Joe Anistranski at UC Davis for permission to use this example.

Student-created e-books. Students can create an e-book on a topic related to the readings, incorporating text, photos and video, if desired, and integrate information from the readings explicitly. E-books can be created by individual students, or they can be created collaboratively, with each student in a small group creating a different page or section. Gonzalez (2016) provides several examples of student-created e-books that can be seen on her website. Such culminating assessments give students a means of synthesizing what they have learned while applying their newly acquired disciplinary knowledge to new contexts.

Each of these tasks helps students to extend their understanding of disciplinary concepts, often through application to authentic tasks, and provides students with a space to demonstrate their new understandings (Walqui & van Lier, 2010). This may be regarded as a form of *far transfer* – the application of knowledge or skills learned in one context to a novel context (Ambrose et al., 2010), which is one of the primary goals of learning.

Conclusion

The importance of deep reading of disciplinary texts in the formation of conceptual understandings of disciplinary knowledge is well-acknowledged. Yet, reading by undergraduates at the university level happens behind the scenes: During their undergraduate education, students are expected to read complex disciplinary texts, outside of the classroom, with little accountability or meaningful motivation for doing the work, and often with little support for the reading process. The application of a three-stage structure for supporting student reading is an inclusive teaching practice that opens access to disciplinary knowledge to all students. This structure provides disciplinary instructors with a generative framework for addressing and promoting students' reading of complex, disciplinary texts, while providing students with the tools needed to engage them actively in the reading process as they develop the critical thinking and reading skills of members in a disciplinary community.

Figure 1. Before-Reading Assignment Example: Anticipation Guide

An Anticipation Guide is one example of an activity that instructors can easily implement in classes prior to students' reading of a text. Anticipation Guides can be relatively simple, consisting of just a few statements, or they can be more elaborate.

Purpose: When using an Anticipation Guide, the instructor's purpose is to activate students' background knowledge about the topic of the reading, as well as to surface any preconceptions students may have that are incorrect and might run counter to the information presented in the reading. A basic Anticipation Guide used to prepare students to read an experimental study reporting on the effects of taking a break from social media is given below.

Design: The Anticipation Guide is designed so that students can respond to it without having yet read the article. It is, therefore, a low-barrier activity that takes only minutes to complete. Students are then asked to talk to a partner in class about their responses for an additional two to three minutes in order to compare and elaborate on their thoughts. This can be done at the end of class on the day before the assigned reading.

Function: Anticipation Guides can have a variety of functions. They can be used to activate prior knowledge, stimulate interest in and curiosity about the topic, focus attention on key disciplinary concepts, bring to the surface prior incorrect knowledge or misconceptions, and provide a mechanism for predicting the content of the text – all approaches which promote engagement in disciplinary readings. They can also function as a formative assessment tool for the instructor.

Anticipation Guide (for students)

Your assignment over the weekend is to read an article about the effects of a short break from social media on people's emotions and feelings of social wellness. To get started thinking about this topic, please indicate whether you agree or disagree with the following statements. Then, discuss your responses with a partner. When you read the article, you can check to see whether the article supports your original opinion.

Statement	Agree	Disagree
People who stop using social media for a period of time may experience some psychological benefits.		
One effect of using social media is that it encourages people to engage in <i>social comparison</i> ; in other words, people often compare their lives to others' lives as they see them portrayed on social media.		
People who passively use social media (just read and don't post) experience greater benefits from a social media break than people who post actively on social media.		

Figure 2. While-Reading Assignment Example: Jigsaw Reading/Peer Instruction Guide

Purpose: The purpose of the Jigsaw Reading/Peer Instruction Guide is to engage students in careful reading and subsequent discussion of a section of text. By explaining their section to others and listening to other students' explanations of *their* sections, students can discuss the reading and clear up any misunderstandings, with the goal of integrating the information from the article into their existing knowledge structures.

Design: The Jigsaw Reading/Peer Instruction Guide below is designed to scaffold the reading of a book chapter by having students read and take notes on a section of the chapter and explain that section to their peers, while receiving explanations and taking notes on other sections from other students. The Guide separates the chapter into stand-alone sections that students can read in isolation from the rest of the chapter. Sections are delineated by page number and students have room to take notes on their section. Students will use these notes to summarize their section to other students. Space to take notes for all sections is included on the Guide so that students can 1) use their reading notes to explain their sections and 2) take notes on what their peers teach them about the sections they read.

Function: Jigsaw Reading/Peer Instruction Guides create an authentic purpose for reading the text (teaching their peers) and give students an audience to whom they can communicate what they have learned from the reading. Such guides also provide a scaffold of the reading process in the form of a handout that can be filled in. This also gives students a study guide after the handout is completed, and if turned in, these guides function as a method of formative assessment for the instructor.

Steps to implement this sample activity (for instructors)

1. Divide the reading into three sections.
2. Establish groups of three students.
3. Assign each student of the group to read and learn a different section of the chapter.
4. Give students time to *independently* preview the whole reading and to read over their section and take notes. This may be done out of class as homework.
5. Direct each student to present their section to their group (i.e., instruct their peers). Other team members can ask questions of their "expert" peers, as they take notes and complete the Guide.
6. As groups engage in peer teaching, you can circulate, facilitate the groups, and intervene for clarification, as needed.
7. Assess student learning informally, as you circulate, or formally by collecting Guides.

Jigsaw Reading/Peer Instruction Guide (for students)

To dig deeper into some of the principles involved in developing content mastery, we will read an excerpt from “How Do Students Develop Mastery” – a chapter in *How Learning Works: Seven Research-based Principles for Smart Teaching* by Susan Ambrose and colleagues.

1. Individually, preview the full excerpt for general understanding.
2. Then, individually, read in detail the section you have been assigned, taking notes on important points in the “Notes” column. You will use these notes to explain your section of the article to your peers.
3. With your peer group: Explain to your peers the section you read and discuss it as a group. Then, the next person explains their section, and the group can discuss. (Note: When each of the other members of your group talks about their section, take notes on the section that person read to complete the Jigsaw Reading/Peer Instruction Guide.)

Jigsaw Reading/Peer Instruction Guide

Section	Notes
Section 1: Expertise (Pages 95-99)	
Section 2: Component Skills (Pages 99-103)	
Section 3: Integration (Part I) (Page 103-middle of page 105)	

Figure 3. After Reading Assignment Example: Double-entry Chart

Purpose: The purpose of a Double-entry Chart to analyze a current event is to help students see how disciplinary concepts manifest in a larger context. Although the context targeted in this example is current events, contexts can be wide-ranging – in the news, in politics, or in another discipline, species or experimental condition. The context is dependent on the discipline.

Design: The Double-entry Chart gives students specific instructions for analyzing the current event. It requires them to interact with the reading in order to articulate the connections between disciplinary concepts discussed in the article and the current event under analysis. The Chart provides space for students to articulate concepts from the reading, identify the page where the concepts are found, and explain the connection.

Function: Some functions of the Double-entry Chart include the facilitation of transfer of learning by requiring students to articulate how disciplinary concepts relate to a wider context (a current event in this case). They can also facilitate research skills and careful reading of texts. Like the prior examples – Anticipation Guide and Jigsaw Reading/Peer Instruction Guide – they can allow instructors to conduct formative assessments of student learning.

Steps to implement this sample activity (for instructors)

1. Assign students to read a scholarly article or book chapter. All students do the same reading.
2. Form groups and assign each group to choose an article and read about a related current event.
3. Provide the chart and explain to students the following:
 - a. Record the URL of the article about the current event.
 - b. In the first column, students identify and describe the main concepts from a unit, article, or theory the class has been studying. (Students also identify the page number from which the concepts come.)
 - c. In the second column, students discuss how the concept manifests or is operating in the current event. Ask them to explicitly describe the connections.

Double-entry Chart (for students)

Analyzing a current event

You have read an article on (topic of scholarly article). In this activity, you will work with a small group to analyze a current event related to this topic to see how the concepts from the article operate in the context of the current event you have chosen. We'll discuss what you talked about in groups with reference to the reading later, as a class.

What current event will you analyze?

Current event:

What is the source of the information you have about the event you will analyze? Please provide URL or attach a copy of the article. URL: _____

In the following table, analyze the event you've chosen and articulate the ways in which the concepts presented in the article apply.

Course Reading		Analysis
Concept or statement from the reading	Page Number	How does the concept apply to or manifest in this event? Does the concept manifest as would be expected based on our article? Does the context change the observed phenomenon? If so, how? Your description here should be specific.

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