Writing to Read, Revisited

Chris M. Anson

NORTH CAROLINA STATE UNIVERSITY

A recent meta-analysis (Graham & Hebert, 2010) shows that certain writing practices and instruction help students improve their reading skills and comprehension. This chapter first summarizes the positive results of this meta-analysis, but then questions its pedagogical recommendations, which, while clearly helpful in fostering students' literacy development, lack attention to four important instructional dimensions: students' motivation and engagement; the cognitive complexity of the task and its relationship to the reading content; the teacher's incentive to be creative; and the social and collaborative nature of the classroom. The chapter explores ways that teachers in all disciplines can engage students in deeper and more intellectually meaningful reading through imaginative, carefully designed low-stakes writing-to-read assignments in a variety of genres. These methods are illustrated with examples from several disciplines and courses such as history, invertebrate zoology, biology, medical ethics, and geography. The examples show how writing-to-read assignments such as those advocated in Graham and Hebert's report—which do not guarantee careful reading, do not lead to engagement, and can easily be plagiarized—can be turned into low-stakes, low-burden, genre-flexible assignments that students find highly engaging and that teachers can use to stimulate livelier and more productive discussions and other forms of classroom interaction.

The situation is familiar. A teacher has assigned students some reading material for homework—an article, a chapter, a story, a webtext. When they show up in class, they're supposed to be prepared to discuss the reading or apply it during an activity the teacher has set up. Valiantly, the teacher struggles to draw out the students' reading knowledge—get them to make observations and connections, explain what they learned, or interpret something interesting or significant. But nothing happens. The students sit mutely, hoping the awkward silence will pass quickly and that, as usual, the teacher will end up telling them all the things they were supposed to figure out and discuss on their own. After all, it's so much easier for them than struggling to make sense of a text that they just skimmed quickly before class, or didn't even glance at.

All of us feel anguish over the prospect that our students don't read, can't read, won't read, or read superficially, passing indifferent eyes across lines of text that engage us but bore and alienate them. When I ask teachers during faculty workshops to list their gravest concerns about their students' learning processes and

behaviors, reading comes up early and often—the suspicion that many of their students don't read assigned material, or that if they do read it, they don't read it critically, thoughtfully, or fully, from start to finish. Although we know that students are exposed to large amounts of text each day online, recent studies suggest that they often avoid academic reading (see Nantz & Abbott, this volume). On the 2014 National Survey of Student Engagement, which is administered to tens of thousands of students at hundreds of colleges and universities each year, 18% of first-year students and 20% of seniors self-reported attending classes often or very often "without completing readings or assignments," those numbers rising to 74% and 75% respectively when including "occasionally" (NSSE, 2014). In high school, the problem may be worse. Even when students are reading deliberately—as when they are collecting material for a research paper—their practices betray superficial reading: in one study of 1,911 student citations, almost three-fourths were from the first two pages of the source text (Jamieson, 2013). Students' tendency to quote sentences in isolation instead of summarizing or referring to broader pieces of text leaves us wondering whether they are truly understanding what they read (Howard, Serviss, & Rodrigue, 2010, p. 187).

In 2010, the Carnegie Corporation's Advancing Literacy Program issued a report, *Writing to Read: Evidence for How Writing Can Improve Reading* (Graham & Hebert, 2010; see also 2011). This report is of special interest to those working in literacy studies because, over the past three decades, research on the relationship of writing and reading in higher education has ebbed. As the field of writing studies gained momentum, especially in the mid-1980's, reading saw consistent emphasis in edited collections such as Fulwiler and Young's *Language Connections: Reading and Writing Across the Curriculum* (1982), Newkirk's *Only Connect: Uniting Reading and Writing* (1986), and Peterson's *Convergences: Transactions in Writing and Reading* (1986) as well as in the scholarship of writing specialists such as Marilyn Sternglass (e.g., 1988), Elizabeth Flynn (e.g., Flynn & Schweickart, 1986), Ann Berhoff (e.g., 1978), David Bartholomae (e.g., Bartholomae & Petrosky, 1986), and (controversially) E.D. Hirsch, Jr. (e.g., 1987). At composition conferences throughout this period, it was not uncommon to encounter many sessions focusing on uniting writing research with scholarship on reading, including schema theory (Anson, Bommarito, & Deuser, 1983), reader-response theory (Brandt, 1990), and transactional approaches to reading (Kucer, 1985). As Carillo (2015) puts it, this was the "moment wherein attention to reading flourished in composition" (p. 2).

Despite the obvious connections between reading and writing, the focus wasn't sustained. Fleeting revivals of interest occurred thereafter, but so little serious post-millennial research on reading has appeared in writing studies that scholars such as Alice Horning have been calling for a revitalization of inquiry into the relationship, especially because technology has put a new face on certain aspects of academic reading. New work (e.g., Carillo, 2015; Helmers, 2003; Horning, 2010;

Horning & Kraemer, 2013; Salvatori & Donahue, 2012; and this volume) is finally picking up where an earlier generation of scholarship left off. As Bazerman, Reiff, and Bawarshi (2013) argue, "As teachers of writing we cannot keep reading out of the picture . . . . The need to connect reading and writing is greater than ever as students negotiate new information technologies and a multi-mediated world" (pp. xi-xii). In the context of such calls, the Graham and Hebert (2010) report is welcome news, helping educators and policy-makers to know more about how writing can enhance what students do as readers and how they can become more proficient readers. But the picture is not entirely rosy. In contrast to the positive conclusions of the report's analysis, its pedagogical recommendations are dull and uninspired. We can do much better.

This chapter will first briefly review the findings of *Writing to Read*. Then, honoring the principle that practitioners, not researchers, are the best equipped to implement the findings of well-supported research, it will suggest ways that teachers in every conceivable discipline can engage students in deeper and more intellectually meaningful reading through brief, imaginative, focused writing assignments in a variety of genres. Creating those assignments, however, requires an analysis of the intellectual processes they are asking for—their "structure of activity"—as well as a strong dose of creativity and an interest in student engagement. Several examples of writing prompts from different college-level disciplines will demonstrate these principles.

Writing to Read: A Meta-Analysis

Writing to Read is the first meta-analysis to examine the relationship between various writing practices' effects on students' reading performance. The authors gathered 104 experimental and quasi-experimental studies conducted at a variety of grade levels.[1]

Research was thoroughly vetted, and studies that did not meet rigorous empirical criteria were rejected. The authors then looked at the effect sizes of all the studies relating to the specific relationship at hand. A full explanation of the study's careful methodology and statistical analysis appears in both the report and article (Graham and Hebert, 2010; 2011) and will not be repeated here.

While experimental research has its limitations as a method for understanding highly complex processes of learning, meta-analyses can be especially useful

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1   The studies in *Writing to Read* focused entirely on K-12 educational contexts, in part because of the (problematic) social and academic assumption that students come to college already prepared as readers, which has generally limited both instruction and research in this area (see Bazerman, Reiff, and Bawarshi, 2013, p. xi). However, the findings are as relevant to the college setting as they are to primary and secondary education.

heuristically and sometimes politically, to the extent that they magnify the results of many individual experimental studies. For example, a meta-analysis of the effects of class size in higher education showed that when the delivery mode is to lecture to students and test them objectively, class size makes little difference; a class of 50 will behave the same way as a class of 100. But when it comes to other important attitudinal, motivational, and cognitive goals, class size makes a significant difference (Pascarella & Terenzini, 1991), with smaller class sizes proportionally enhancing specific learning outcomes. A study like this easily cuts through arguments based on the politics of school funding by asking what characteristics of learning and delivery systems we find most important to invest in. Similarly, in one of the most important meta-analyses of instructional methodologies for writing, Hillocks (1986) showed that none of the included studies provides any support for teaching grammar as a means of improving composition skills. If schools insist upon teaching the identification of parts of speech, the parsing or diagramming of sentences, or other concepts of traditional grammar (as many still do), they cannot defend it as a means of improving the quality of writing (p. 138).

Not only did direct grammar instruction fail to improve overall writing ability, but there was some evidence that students wrote worse at the end of such instruction than when they started. This study, which has not been refuted, continues to help progressive educators to forestall the reintroduction of mindless grammar drills in the name of developing students' broader literacy interests and abilities. In this sense, *Writing to Read* may be useful in support of programs that provide faculty development, incentives, and rewards for the integration of writing as a tool for reading in all subject areas—and especially for its increased attention at the college level. Overall, the analysis found that:

- "students' comprehension of science, social studies, and language arts texts is improved when they write about what they read,"
- "students' reading skills and comprehension are improved by learning the skills and processes that go into creating text," and
- "students' reading comprehension is improved by having them increase how often they produce their own texts" (p. 5).

The authors conclude that writing about reading "should enhance comprehension because it provides students with a tool for visibly and permanently recording, connecting, analyzing, personalizing, and manipulating key ideas in text" (p. 13).

In many ways, the recommendations in the report push against a dominant model of reading and writing in which students read first and then, through writing, are tested on their understanding and interpretations of the text. Writing is used not as "input," not as a way to come to terms with and construct the text's meaning, but as "output," as a measure or reflection of their (finished) reading. For this reason, the writing tends to be higher-stakes—an essay exam or a formal paper, for

example—and is judged for its adherence to the conventions of those genres, which limits the nature and scope of the assignments teachers will create (see Figure 1).
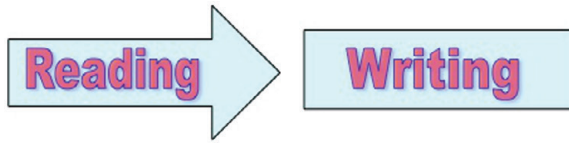

Figure 1. A Conventional *Model of Reading and Writing in Academic Contexts*

Writing to Read, on the other hand, supports a reciprocal model of reading and writing that sees them as intertwined (Figure 2). Students may try to summarize a text and realize that they haven't fully grasped its details or significance, which propels them back into its words in the quest for fuller understanding—rethinking, reconsidering, and creating new meaning. Or they may write questions about the text and answer them as they read, further solidifying their understanding of the details. Used for such purposes, the writing is often brief, with less risk, designed not to measure the outcome of reading but to provide a means to think more fully about it.

Figure 2. A Reciprocal *Model of Writing and Reading*

The idea of writing informally about reading is not new (having been advocated for decades in writing studies). However, when we look across the entire landscape of higher education, in all content areas, it is rare to find the systematic integration of writing-to-read in coursework. Reading is typically seen as independent of (and usually done prior to) tests, formal papers, or classwork, which may take the form of lecture or discussion or even hands-on activity in labs and clinical settings.

In the context of a focus on the potential benefit of writing to students' comprehension of sophisticated content material across the curriculum, Graham and Hebert's first conclusion is especially important: that students' comprehension of texts improves when they write about them. By "writing," the authors mean the following activities, based on the studies they examined (2010, p. 5):

- Responding to a text in writing (writing personal reactions, analyzing and interpreting the text)
- Writing summaries of a text
- Writing notes about a text
- Answering questions about a text in writing

There is little question that these strategies, when well taught and implemented, can only enhance students' reading comprehension and also contribute to their development as writers (although it could be argued that the strategies move only slightly away from a "reading-to-write" model). But they also ignore some crucial aspects of teaching and learning, and although they may be supported across dozens of experimental studies, they go only so far in responding to the complex learning situations that most teachers orchestrate. In particular, the strategies fail to consider four dimensions of learning that, if accommodated, could significantly enhance the strategies' success:

- students' motivation and engagement (see Kuh, 2003);
- the cognitive complexity of the task and its relationship to the content;
- the teacher's incentive to be creative, i.e. to engage the pedagogical imagination; and
- the potential of the written text to contribute to collaborative learning and enhance the social dynamic of the class (which is of increasing importance and availability with digital access and tools for collaboration and dialogue).

These dimensions of teaching and learning have been recently given voice in the *Framework for Success in Postsecondary Writing* (2011), a report issued jointly by the Council of Writing Program Administrators, the National Council of Teachers of English, and the National Writing Project. Among those features defining preparation for postsecondary education are eight "habits of mind" that include curiosity, openness, engagement, and creativity (p. 1), all of which could be more effectively fostered than through writing summaries of texts or taking notes on them.

To further explore these dimensions in the context of Graham and Hebert's recommendations, consider a teacher of introductory biology who wants her students to read assigned textbook material more deeply and carefully. After each chapter assignment, she requires students to write a *summary* of the material. First, such an assignment fails the test of motivation and engagement: it's exceedingly boring and routinized, relying on a typical "canonical" academic task, and responded to without imagination. Second, it requires no creative pedagogical energy from the teacher, who almost mindlessly includes the requirement after each reading and is therefore unlikely to look forward to seeing students' responses or be surprised by them. Third, it requires a relatively low level of cognitive complexity (searching for macrostructures in the text and organizing them into a brief synthesis), with no surrounding context or complex connections to the meaning of the text itself.[2]

2   Evidence of this relatively shallow level of cognitive sophistication comes from the increasing capabilities of computers to create accurate summaries of longer texts or data (see Levy, 2012), in contrast to the absolute inability of computers to "read"—that is, understand, interpret, and discover meaning in natural-language texts (Anson, 2006).

Finally, it offers little potential to position readings in some richer social and interactive space and open them up to deeper interpretive possibilities, igniting classroom interaction (beyond an equally dull activity in which, for example, students compare their summaries for accuracy). This is not to say that summary fails to engage students with the texts they are reading (see, for example, Marzano, Gaddy, & Dean, 2000, Chapter 3); instead, it's to suggest that we can move far beyond simple summary in the design and implementation of writing-to-read assignments.

Beyond Meta: Creating Meaningful Writing-to-Read Assignments

To instantiate the model in Figure 2, it's necessary to place writing-to-read assignments along a continuum of formality and risk. Figure 3 shows such a continuum. Writing on the far left represents the most informal, lowest-stakes genres, which are familiar to most teachers of writing: journal entries, learning logs, dialogic blogs etc. Most of the recommendations of *Write to Read* fall on this end of the continuum, such as note-taking and personal reactions. Typically, the writing produced in response to such assignments may look acceptably associative, unorganized, and a-grammatical because it is almost always written in one draft without revision. Although some writing toward this end of the continuum may motivate and engage students (such as personal responses in which they relate the material to their own lives) or create interpersonal connections in the class (such as through blogs and forums), it generally fails to meet the four standards described above. Teachers need only assign an ongoing dialogue forum once, and students can end up finding it tedious or disengaging, or may write unthinkingly, with their minds on what some educators call "autopilot":

> I thought the reading for today was OK. It was pretty interesting. I had a hard time finishing it at first but then I got through it. I didn't think it was too complicated. The author made some good points.

As we move along the continuum toward the middle, assignments are still produced in one sitting and continue to be understood as involving little risk, differentiating them from formal assignments that should always require significant support and multiple drafts based on readers' responses. Here, however, students are provided with more constraints linked to the reading material—a context, a specified audience, a problem to solve.

Crafting these genres of assignments begins with the articulation of clear learning goals relating to course material, a process generally known as "backward design" (Wiggins & McTiege, 1998). These goals determine the scope and nature

of the assignment. For example, a teacher who wants students to learn about a historical figure through some research, including his or her career, family and influential friends, contributions to society or science, what sort of time period he or she lived in, and so on, might ask students to use the online educational platform "Fakebook," which allows students to emulate a Facebook page that the historical figure might have set up at the time. The student then populates the page with "friends," interactive posts that are distillations of research on the figure, videos and still photos, and other material (see http://www.classtools.net/FB/home-page).

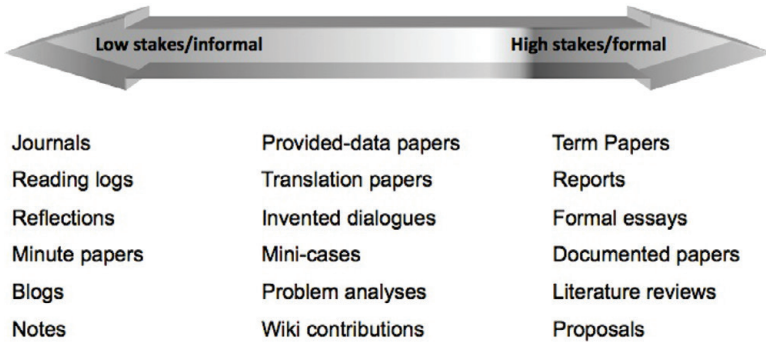| Low stakes/informal		High stakes/formal
Journals	Provided-data papers	Term Papers
Reading logs	Translation papers	Reports
Reflections	Invented dialogues	Formal essays
Minute papers	Mini-cases	Documented papers
Blogs	Problem analyses	Literature reviews
Notes	Wiki contributions	Proposals

Figure 3. A Formality-Based Writing Continuum

Because it would be very difficult to circumvent the need to gather information about the historical figure in order to build the Fakebook page, the teacher would almost surely realize his or her learning goal. In this sense, the assignment is "constructively aligned" (Biggs, 1996), meaning that it demonstrates symmetry between what it wants students to learn and what specific *activities* it sets up to guarantee that learning. In addition, the assignment engages the writer because the platform emulates familiar social media that usually motivate self-sponsored writing, provides a space that can be built up over time from the student's investigations, can sometimes be funny (as when important events are rendered in colloquial language or when the figure's "friends" post messages to the page), is both visually and textually appealing, and engages the imagination of viewers and opens up the possibility for highly successful student interaction and collaboration.

In the context of this volume, the general learning goal under consideration is that students will, through brief writing assignments, *read* their assigned material more fully, thoughtfully, and interpretively, in keeping with most definitions of college-level reading.[3] In addition to considering the value of constructive alignment

3   From a cross-curricular perspective, college reading must be understood as much more complex than common definitions often allow. It is the process of actively constructing meaning from text, including multimedia manifestations of text, in the context of specific genres, domains of knowledge, and specialized uses of language. It involves a transaction between authorial intention, features of text, and the reader's instantiation of schemas and other forms of existing knowledge.

in shaping such writing assignments, two crucial questions must also be asked:

- What *specific* underlying intellectual activities does the assignment require that compel fuller, more thoughtful, more interpretive reading? (We might call this the "structure of activity" beneath the assignment: the various processes that surround, inform, and are informed by their reading.)
- Is it difficult or impossible to circumvent those activities?

Consider, for example, a writing-to-read assignment intended to compel students to read the first act or so of *King Lear*.

> After reading through Act 1, Sc. 3 of *King Lear*, write a brief (half-page) summary of what has happened so far in the play.

This brief writing assignment realizes the Graham and Hebert recommendations effectively: students must read the play carefully enough to explain what's going on in writing. But the structure of activity beneath the assignment is limited to pulling out the most salient pieces of the plot. While there is no question that the assignment requires effort and knowledge of the play's particulars, it could be much more engaging and dynamic. In addition, such assignments can be easily circumvented with a quick online search, the results of which can be paraphrased or even copied verbatim. Here is one of hundreds of online *Lear* summaries, from SparkNotes:

> Lear, the aging king of Britain, decides to step down from the throne and divide his kingdom evenly among his three daughters. First, however, he puts his daughters through a test, asking each to tell him how much she loves him. Goneril and Regan, Lear's older daughters, give their father flattering answers. But Cordelia, Lear's youngest and favorite daughter, remains silent, saying that she has no words to describe how much she loves her father. Lear flies into a rage and disowns Cordelia. The king of France, who has courted Cordelia, says that he still wants to marry her even without her land, and she accompanies him to France without her father's blessing.

With some imagination, an interest in student engagement, and an understanding of what makes for richer, more nuanced and meaningful writing-to-read assignments, a teacher might create the following alternative:

These and other complex factors, well demonstrated in studies of eye movements during reading (see Anson and Schwegler, 2012), make college reading an experience whose difficulty varies constantly across contexts and requires considerable developmental and experiential support in all classroom instruction.

> After reading through Act 1, Sc. 3 of *King Lear*, imagine that
> there is one piece of modern technology in the world of the play:
> on online chat system. Create an online dialogue between Cor-
> delia and Lear, drawing on what has happened so far in the play.
> Shakespearean language optional.

Beneath this small shift in the assignment is a more complex structure of intel-
lectual activity. First, the student must know not just "what's happened," but what
Cordelia and Lear might be feeling, what is revealed in their interaction, what Cor-
delia might be thinking about her sisters and their husbands. The assignment more
successfully meets 1) the criterion of motivation and engagement (partly through
the chat genre and the chance to enter the virtual Lear world); 2) the criterion of
greater cognitive complexity (in addition to knowing the play, the writer must
use various rhetorical strategies, write in the imagined or constructed voices of
Cordelia and Lear, and even try out some Elizabethan English); 3) the criterion
of teacher creativity (in a somewhat more imaginative assignment whose results
might be more interesting to read than a batch of summaries); and 4) the criterion
of potential social interactivity (students can read their dialogues aloud in small
groups or to the class or post them to a website). Yet at the same time, these quickly
written responses are understood to be *informal*, used to come to terms with the
play rather than to be tested on it. The assignment doesn't require a thesis, support
for assertions, and a logical structure; it requires an attempt to convey a developing
understanding of the play in the form of an online chat between characters. The
result is a more dynamic response, in contrast to the static summary, which gives
a sense of completion and rigidity. The potential for interactivity around students'
online chats is obvious.

It is this feature of write-to-learn assignments—their informality and low
stakes—that also allows them to be created in any imaginable genre, regardless of
the disciplinary goals or orientation of a course (see Anson, 2011, for a discussion
of one such genre, dialogues). In business courses, for example, students are some-
times assigned to write extended obituaries of companies that have failed, provid-
ing the details of their demise. Few business students will find themselves routinely
asked to write obituaries on the job, but unlike learning the professional genre of a
financial report, a business memo, or a public relations document, the goal is not
to "learn to write" more effectively but to "write to learn" more powerfully. Every
conceivable genre is at the disposal of the teacher's imagination. The *King Lear*
assignment could also take the form of a series of exchanged letters (sent by carrier
pigeon) or a chain of voicemail messages. Or students could create a digital news
forum reporting on Lear's denouncement of Cordelia with subsequent forum posts
from any of the characters, who contribute their perspectives.

It is important to realize that lowering the stakes of the assignment—by

reducing its "worth" in a grading system, by limiting the timeframe for composing it, and by downplaying the features of formal, stylized, carefully revised and edited academic prose—doesn't also weaken the intellectual effort students must put in to respond to it. Rather, effort and time are more easily linked to engagement than the formality or scope of a task; students can be largely unengaged in a substantial research paper. At the same time, *design* is crucial. From a teacher's perspective, lower-stakes writing-to-read assignments in no way diminish the pedagogical effort needed to think through how the assignment challenges students to read, reflect on, and respond to a reading. Part of that effort involves considering the *structure of activity* beneath the assignment and what, exactly, it does to promote more careful, thoughtful reading.

The Structure of Activity: Unpacking Writing-to-Read Assignments

In creating low-stakes writing-to-read assignments, analyzing the structure of activity beneath their design requires attention to all the processes students need to go through in order to complete the assignment. Consider the following writing-to-read assignment in a medical ethics course. Students must read an article reporting on the results of a major survey study that asked women and their non-gestating partners what they would prefer for the disposition of their unused frozen embryos following successful *in vitro* fertilization (Lyerly & Faden, 2007):

> In a paragraph or two, summarize the Lyerly and Faden article.

Compare this writing-to-read assignment with its revised version, which takes the form of what is sometimes called a low-stakes "voices" or "join the conversation" assignment:

> While reading and reviewing the Lyerly and Faden article, you find yourself in the company of several people who have read this study and are talking about it. The conversation is wide-ranging and, as is typical in discussions about complicated ethical issues, gets a little tense. At one point, Paul, who has been quietly listening, blurts out this response:
>
> "This study is bogus! The authors totally twist their results to support an anti-embryo-protection stance. The fact that 42% of patients can't be located after five years to say what they want to do with their embryos indicates that they want them cryogenically preserved forever, that is, never destroyed. The authors report that a significant percentage (82%) of those who said

> they *didn't* want their embryos donated to other couples wanted
> to save them for themselves or keep them forever frozen. The
> authors never talk about these results! Nor do they talk about the
> fact that more "partners" felt it was OK to donate the embryos
> than the infertile women who produced the eggs from which the
> embryos were created. Totally biased!"
>
> In a paragraph or two, respond back to Paul as if you're part of
> the conversation. Is he right about the bias? How do you know?

Compared to the first version of the assignment, this one has required a little investment of time and creativity from the instructor: a context, a made-up statement from a fictitious person, an assertion that may or may not accurately characterize the study, and the inclusion of both accurate and inaccurate statistics from the original article (42%, 82%). From the student's perspective, the assignment involves a structure of activity that includes the following processes:

- read the article;
- consider the fictitious but realistic interpretation of the article;
- re-read the article, checking for the sources of the "voice's" positions, opinions, and support (this requires reconsidering the methodology as well as the way the results are rendered);
- decide how to respond to the voice, agreeing or disagreeing with various points and correcting misinterpretations if necessary;
- render the response in a conversational genre in keeping with the case.

In addition to the way these processes "guarantee" the goal of deeper reading, it's hard to imagine how students could circumvent their engagement with them. A student could simply agree with Paul in a short statement, but would know that doing so represents a significant risk, since the agreement needs to be corroborated by a closer reading of the article. (In this course, the professor has found that "join the conversation" assignments yield more careful reading of assigned material than any other strategy she has used.)

Playing with fictitious personae and contexts can lead to especially creative and engaging low-stakes assignments. In a course in the Geography of the Southwest at the University of New Mexico, for example, Dr. Maria Lane has designed a number of imaginative writing-to-read assignments that tap into students' creative potential while also ensuring that they learn the relevant material.[4] Compare her original version:

> Describe how the Diné and the Spanish settlers in the Southwest
> _____ used the same land for agricultural purposes.

4   This assignment and the student's response are used with permission.

with the revised version:

> Imagine you are one of the sheep living in a Diné-controlled flock sometime around the year 1900. In about 700 words, provide a description of what your life is like *and* how it compares to the lives of some of your sheep ancestors who came to the Southwest in Spanish-controlled herds. Since you are writing for an audience of humans who have never experienced life as a sheep, be as explicit as possible about your relationship with the landscape and with the Diné community (or the Spanish colonial community, in the case of your ancestors).

The structure of activity behind the sheep case involves at least the following:

- critically read the required materials about land use;
- re-read, focusing on the content relating specifically to land use;
- compare information about land use between cultures;
- hypothesize differences in the use of land;
- render an account of land use through the experiences of sheep herds living in the different periods among the different cultures;
- create a narrative that has contemporaneous information with information from the sheep's past;
- add any creative elements desired.

As seen in the following excerpt from one student response, this low-stakes assignment not only realizes Maria's goal of ensuring that students read and learn the material about land use, but also highly engages students in the process, giving them practice—without risk—with language play, which accomplishes another goal indirectly, of improving students' writing abilities.

> Hey! Hey, you! Shoo! Shoo! You're standing on a premium patch of blue grama! Since all you're using it for is standing on, would you mind moving aside to some bare patch of ground so I can eat? Sorry to be so rude, but good grass is hard to come by these days. Frequently we sheep are forced to nibble forbs and woody species; yuck! Those can be hard to digest, with all that extra lignin and whatnot. Plus nothing's more embarrassing than getting a twig caught between your teeth. Once in a while we do get a tasty alfalfa treat, but those treats are becoming few and far between these days.
>
> Sometimes I wish I lived in the olden days when life was much better for us sheep. When I was just a wee lamb my great-

great-grandram used to tell us stories of the way things used to be. Flocks were smaller and the eatens were good. They got to continuously roam the land. Rotating from valley, to Piñon-Junipers, to upland meadows and everything in between gave the sheep of yore tasty vittles year-round. Constantly on the move with the Diné, they were. That's the life! Now we are restricted to the reservation and that means we don't move around as much. (etc.)

Like this assignment, mini-cases require imagination and an investment of time to create, but doing so places students into an imagined context where the material they are reading can take on new rhetorical and situational complexity and interest. Compare this assignment in an introductory (general-education) biology course:

After reading Chapter 3, describe the process of plant growth.

with this revised version:

The following experimental conclusion was published by Jan Baptista van Helmont in 1648 (translated):

I took an earthenware vessel, placed it in 200 pounds of soil dried in an oven, soaked this with rainwater, and planted in it a willow branch weighing 5 pounds. At the end of five years, the tree grown from it weighed 169 pounds and about 3 ounces. Now, the earthenware vessel was always moistened (when necessary) only with rainwater or distilled water, and it was large enough and embedded in the ground, and, lest dust flying be mixed with the soil, an iron plate coated with tin and pierced by many holes covered the rim of the vessel. I did not compute the weight of the fallen leaves of the four autumns. Finally, I dried the soil in the vessel again, and the same 200 pounds were found, less about 2 ounces. Therefore 169 pounds of wood, bark, and root had arisen from water only.

With the assistance of time travel and your newly acquired knowledge from the readings in BIO 106, please help M. van Helmont understand the source of the "169 pounds of wood, bark, and root." You must incorporate the following words from the readings in your answer: *carbon dioxide, oxygen, water, glucose, photosynthesis, sunlight, chloroplasts*, and *pigments*.

Here the structure of activity involves at least the following:

- read the chapter;

- read and consider the van Helmont experiment, including its method and controls;
- re-read the chapter in order to compare van Helmont's conclusion with the contemporary account of the processes of plant growth;
- study and understand the role of each of the listed terms in those processes;
- optionally invent a way to time travel;
- greet Mr. van Helmont and create a rhetorically appropriate exchange, or monologue, explaining what is really behind his experiment, being careful not to act too haughty or condescending in light of van Helmont's significant contributions to science;
- Optionally embellish with further imaginary features, including attention to language.

Like this assignment, a "provided-data" paper also relies on the provision of some information either pulled from or parallel to (and supplementing) the material in assigned readings. Compare the following assignment from a course in invertebrate zoology taught by Professor Gerald Summers at the University of Missouri:

> Describe the relationship between coral and zooxanthellae.

with its revised version:

> Arrange the propositions below in a logical order, connect the individual statements with appropriate transitions, and arrive at a conclusion that is supported by your argument. Using all of the points supplied below, write a brief response concerning "The relationship between coral and zooxanthellae."
>
> - Coral reefs are formed by scleractinian corals that typically occur in shallow (<60m) water.
> - Hermatypic corals contain photosynthetic algae (zooxanthellae) in special membrane- bound cavities inside the cells of the gastrodermis.
> - Reef corals are limited to clear water because suspended material interferes with the transmission of light.
> - Over two-thirds of the metabolic requirements of corals are provided by zooxanthellae.
> (Etc.; see http:// http://cwp.missouri.edu/teaching/syllabi/ index.php)

Here the structure of activity includes at least the following, as compared with the original version:

- examine a random assortment of statements;
- interpret and judge the validity of each proposition (in a more complex version of the assignment, irrelevant statements are scattered throughout and must be rejected);
- create causal or other links between statements;
- arrange the statements into a hypothetical line of reasoning;
- test the line of reasoning; reconsider rejected statements;
- render analysis into expanded, persuasive prose.

As these examples demonstrate, low-stakes writing-to-read assignments can be created in hundreds of common but engaging genres and draw on the imaginations of both teachers and students, yet still require sophisticated, challenging thinking based on reading and re-reading of even difficult texts. Interestingly, anecdotal information suggests that students become more inspired and engaged in such assignments than in the usual conventional assignments that require little thought from the teacher giving them and yield the same predictable material from students.

Conclusions: Insisting on the Conditions of Innovation

Creating innovative low-stakes writing-to-read assignments pushes against several prevailing educational conditions. First is the tyranny of imposed assessments of student learning. When outcomes are narrowly defined (such as the "ability to accurately summarize reading material chosen at an appropriate developmental level"), teachers begin behaving pedagogically in ways that most directly match the expected assessments. In the K-12 context, this imposition of external assessment strips away pedagogical imagination and systematically denies teachers the opportunity to bring their creativity and instructional talents to the design of their own curriculums (see Pedulla, et al., 2003). College teachers may experience somewhat more freedom, but the same impulses exist, exacerbated by a reward system that does not fully encourage innovation in teaching. Assigning reading by itself, and then later testing for an understanding of it, with no attention to how students work through and interpret the text and then integrate it into their current knowledge and understanding, relies on a trial-and-error model that is less about teaching than sorting and ranking. Assigning reading accompanied by conventional, unimaginative tasks such as summarizing or note-taking represents a small step forward, but still does not fully align the goals of a course or curriculum with the methods that best reach those goals (see Biggs and Tang, 2011). Without sufficient incentives (and time), many research-oriented faculty won't put in the effort to engage students in ways that guarantee they will read assigned material with the kind of care and insight that are otherwise simply expected.

A second barrier to the innovation suggested here is constructed from dominant beliefs that teaching and learning should be dry and academic, unadorned by context, humor, and imagination. Thankfully, new approaches from the gaming community have pushed against these beliefs with tangible results (Gee, 2007). Greater attention is now also being paid to the complex role of reading across the curriculum (see Odom, this volume), and the relationship between engagement and both learning and completion (Kuh, 2003). But teachers often need "permission" to unleash their pedagogical imagination and begin thinking of ways to energize their instruction and engage their students. This impetus does not give in to a notion of students as "clients" or a watering-down of standards; rather, it *raises* the bar by enriching and making more complex what are otherwise static and unidimensional assignments.

A number of implications for writing-across-the-curriculum (WAC) and writing-in-the-disciplines (WID) programs arise from the potential of writing to enhance reading. Among the most important, WAC and WID leaders must represent their programs not only in their conventional (and publicly presumed) role, as serving the interests of "improving students' writing abilities," but also in the role of helping faculty to understand the interrelated nature of language and to move campus communities beyond the notion that students should "know how to read" when they come to college and that no attention should therefore be paid to the processes and results of their reading. Significant new faculty-development work is needed in this area, especially in helping all stakeholders, including students, to move beyond a focus on college reading as "remediation."

As the examples and processes in this chapter suggest, insisting on full, careful, critical reading of assigned material can re-energize courses across the curriculum and lead to much higher levels of academic achievement among students. Doing so will require that we encourage teachers' creativity, have faith in their ability to achieve agreed-upon educational outcomes in a variety of ways, and trust them to know when they are or are not achieving those and to redesign and restructure their teaching accordingly.

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