Paul Hamslet

Designing Courses for a Complex World

Creating Wicked Students
• They provide measurable evidence of what students have or haven’t achieved.
• They engage students on a level that enacts our best hopes for them.

Step 2: Keeping those goals in mind, consider the various possible structures you came up with in chapter 3, such as

• typological structures (chapter 3, pp. 45–54): *categorical, chronological, methodological, theoretical,* and *use;*
• problem-based or case study structures (chapter 3, pp. 55–59); and
• goals-based structures (chapter 3, pp. 60–62).

Step 3: Choose a single structure that seems to work well with your goals, effectively communicates key knowledge to students in a way that makes sense to someone less familiar with the field, and appeals to you.

Step 4: If necessary:

• Make revisions to the organization or order of your chosen structure.
• Flesh out the contents or ideas of your structure.
• Revise your goals to better match your structure.

Step 5: Set all this aside for now.

The English department at my college has an excellent course, a senior seminar in which the same group of students work together all year. The course is 6 hours per week and only counts as a single credit despite its double requirement. Over the duration of 2 semesters, the students in this class struggle, suffer, fail, succeed, bond, grow, struggle, succeed, grow, grow, and grow. Part of the dynamic is simply the safe space created by having the same 15 students work together for 9 months. The real key to the course, however, lies in what is required of them. The first day, 3 students each bring an individually crafted bibliography on *Beowulf* and present their own ideas. Then on the second day, 3 other students make the same kind of presentation on Chaucer, the third day is *Sir Gawain and the Green Knight,* and so on. The instructor for the course meets with the students before their presentations, hears an initial description of their ideas, prods and gives advice, and maybe offers a source or two. But when it comes to the actual presentation, the students must assume absolute accountability for their work. There is no safety net. In other words, this is not one of those situations where the student’s presentation is a precursor to more meaningful comments by the professor or where the professor is waiting in the wings ready to swoop in and bring everything to a tidy conclusion if something goes wrong. Only the student’s words count.

What’s astounding about this class is how it changes the students. By being forced to take responsibility for their own learning, the students grow tremendously, almost to the point that they are unrecognizable by the end of the year; the light in their eyes is just that much different.

The point here is one that I’ve made before, and will undoubtedly make again. There is really only one way for people to gain authority: They must assume it, repeatedly and often. Sometimes this occurs in small situations
that don't count for very much, sometimes in major situations that count a great deal. Sometimes they fail, sometimes they succeed. That sense that one is capable of engaging in complex problem-solving can only come from solving complex problems. This is explored in more detail in this and the next two chapters, first by examining assignment and exam design in a wicked context and then by reviewing the day-to-day teaching techniques that help instructors nurture authority in their students.

**Contexts of Uncertainty**

Randy Bass (2014), who runs a pedagogical incubator at Georgetown University, once made the argument that high-impact practices succeed because, among other things, they “offer the opportunity to integrate, synthesize, and make meaning,” pushing students to “make decisions in the midst of uncertainty.” Because our goal here is to have the same kind of impact as these high-impact practices, I am adopting Bass’s language as we move forward. Whatever else the assignments and exam questions we design in the following pages achieve, they must ask students to

- **make meaning**, that is, construct new ideas or solutions to problems, as well as new understandings of those problems and their causes; alternatively, they may ask students to look forward into the future and make predications based on their learning;
- **integrate**, that is, foreground useful connections among seemingly disparate areas of thought, with the goal of adapting problem-solving methodologies from one context to another;
- **synthesize**, similar to making meaning in that students must bring together ideas to create a new understanding of a problem or a solution to that problem; and
- **make decisions**, or take action, based on their thinking as they make meaning, integrate, and synthesize.

Furthermore, students should do these things whenever possible

- **in contexts of uncertainty**.

If anything, this last idea is the most important; if our goal is prepare students for a real world filled with complex problems, we need to begin by bringing that complexity into our classrooms. If we’re doing our jobs correctly, there will be no answers at the back of the book, no websites that can be skimmed for easy solutions. Students will be required to draw from a variety of ideas and methodologies, essentially making it up as they go along—and I mean that in a positive way!

Given our criteria for success, perhaps it is useful to examine more traditional modes of assignments to see how they measure up. Consider, for instance, the traditional academic writing assignment. As I’ve written elsewhere (Hanstedt, 2012), every rhetorical situation has three basic components: the speaker or writer, the topic, and the audience that is reading or listening. Change one of these elements, and the style, tone, and content of the communication will change. So a student writing an e-mail to a friend about a final exam will sound very different when that same student writes to a friend about a party, which will sound very different when the student writes to the professor about the final exam (we’ve all received those e-mails).

When we think of traditional writing assignments, the rhetorical situation usually plays out as illustrated in Figure 4.1. In terms of authority, what’s noteworthy here is that it all lies with the professor. The professor has been studying a topic for years and has the grade book and all the power it carries with it to shape not only a student’s grade in the course but the direction of his or her future. The student, on the other hand, has virtually no power, having been in the course for 10, maybe 12 weeks before receiving the final assignment. The student knows the course content only as a consequence of what has been assigned by the professor, said by the professor in lecture, or stated in the context of a discussion controlled by the professor.

For all practical purposes, then, the rhetorical triangle should look like Figure 4.2.

**Figure 4.1.** Traditional academic assignments.
As one of my colleagues observed, the triangle in Figure 4.2 already looks so much like a dagger that you might as put a handle on it. In this situation, the student is staring up at the professor and the topic, essentially helpless at the bottom of a long, steep hill. For all but our best students, the rhetorical challenges of this situation are tremendous. Many of them try to assume authority by drafting jargon-laden prose that often escapes their control; others gloss over key concepts, working (accurately) with the assumption that their audience—the professor—already knows this stuff; and still others simply skim outside sources until they've found so many quotations to drop into their papers that we never actually learn what they are thinking, much less see them achieve any ownership of the topic.

With all this in mind, it's perhaps clear that what we want is to create some sort of rhetorical situation where students must assume authority for their papers, taking responsibility for their ideas and constructing new understandings of a text, a theorem, or a political dilemma. At moments like this, I remember my own experiences in graduate school and my attempts to gain expertise in the field of Victorian literature. I had to take three weekend-long qualifying exams before I could write my dissertation. Then I had to defend those exams in front of professors in my department. You would think that these kinds of experiences would cause a person to make sense of a field. But as many professors I've spoken to agree, the point when I really became the master of this content was when I first stepped into a classroom full of undergraduates. Then it was just me. Could I explain the relevance of imagination in the Romantic era? Could I construct a cohesive, intelligible narrative of the evolution of Victorian thought? At that point—and only at that point—did I begin to master the material. Faced with an audience of less-informed people, I became the authority.

Perhaps, then, if we want our students to assume authority, the rhetorical triangle should be more along the lines of that shown in Figure 4.3. In this situation, the student is more knowledgeable than the audience. As a consequence, he or she must take on the responsibility of explaining everything to the audience without glossing over complicated concepts, using the rationalization that “the professor already knows this,” or citing class discussion as an official source. Because students can't assume their audiences have any more than a basic understanding of the material being covered, outside sources must be introduced and summarized carefully. Similarly, all quotations must be analyzed by the student, woven into the language and argument of the student's paper in ways that someone who knows nothing about the topic will be able to follow. Students tend to assume that quotations speak for themselves. They don't. They must always be tied in to the larger argument in meaningful ways. In other words, changing the audience of a paper from the implied professor to an explicitly less familiar reader pushes our students to do all the things we've been trying to get them to do: explain their ideas, provide context, analyze carefully, and avoid oversimplified assumptions about what is and is not obvious.

This sort of rhetorical reconstruction pushes students to assume authority. For example, a biology professor I worked with in Delaware designed an assignment for her first-year seminar on emerging infectious diseases that asked students to create an informational pamphlet on an emerging infectious disease, pitched to PTO [Parent-Teacher Organization] parents. Include causative agent and vector, threat to local population, and possible measures to reduce risk. (K. Curran, personal communication, January 8, 2014)
The beauty of an assignment like this is that it requires students to tackle and understand some complex terms (causative agent and vector) as well as master some challenging methodologies (e.g., determining risk for a particular geographical area), and then explain it to an audience that didn’t take the course, in language the audience will understand. In other words, the thinking in this course is still high; the expectations of the assignment are not in any way watered down from what they would be in a traditional paper. But because students have to translate this complex material to a less-informed audience, they are forced to own the material in ways they otherwise would not. They must find their own language to explain these ideas. They must make sense of the content for themselves. They must make meaning.

In another example from a required general education course on Western civilization, the students are told,

You are running for Congress. In an address to your potential constituents explain how the political, religious, economic, or social problems in Rome might influence policy in an American context.

Here again we have complex topics the student needs to understand before being able to explain it to others. There is no room for glossing or skating over topics, relying on the professor’s knowledge. There is no professor here, just potential voters, many of whom likely know very little about economic practices in ancient Rome.

It is worth noting that this example also asks students to apply course content to a new setting by integrating information and making meaning: How do Roman social problems relate to our world today? How might these problems help us understand the underlying causes of our issues? What solutions might we glean from the Romans? How might these solutions need to be adapted? In situations like these, there are no perfect answers. Certainty does not exist. Students have to think for themselves, analyze by themselves, create by themselves.

The following is an example from Genelle Gertz of Washington and Lee University, drawn from her class on metaphorical poetry:

You have been invited to lecture to two separate audiences on John Donne. You are asked to deliver a sermon to a Christian congregation (you can specify an exact one if you wish) on spiritual principles in John Donne’s poetry. Then the next day you address a local atheist group on John Donne’s religious poetry. Provide a close reading of at least one poem and draw upon relevant sources in our reading.

Gertz’s instructions continue:

Just as John Donne inhabited different roles throughout his life, and changed for different audiences, so too, you inhabit different perspectives in this assignment. How might Donne’s poetry speak to a church congregation? Your church audience is united by its faith, but it likely has a range of educational backgrounds and ages. Only a few will have been English majors. Contrastingly, how will you address a group of nonbelievers on the same subject? What will you emphasize in this setting that you might not have in the previous one? (G. Gertz, personal communication, October 3, 2013)

Gertz has complicated her students’ task by giving them not one but two audiences they need to consider. Here again, the students have to own the content to be able to explain it. But even better, they become rhetorically nimble with that content, recognizing how meaning is made differently for different people. This is a challenging assignment to be sure, but completely appropriate for an advanced course in the field.

All three of these examples involve more or less general audiences—the voting populace, a group of parents, and people who attend church and people who don’t. But as Danielewicz and Jack have pointed out, slightly more focused audiences might also be appropriate for academic assignments. They suggest writing to “nonspecialists,” a group they define as generally knowledgeable in a discipline without necessarily being an expert (J. Danielewicz & J. Jack, personal communication, February 13, 2009). For instance, students enrolled in a course in nutrition might be given the following assignment:

The New York state government has created a council to develop a list of recommendations regarding the lifestyles of primary school age children. As the nutritionist on the council, your job is to choose a region, examine its population, and construct an appropriate menu for breakfast, providing a carefully researched rationale that takes into consideration all the relevant components of our work this semester.

In this case, although the menu is being prepared for the general public, the rationale and all the logic, evidence, and analysis it contains is pitched to the other members of the council, who, although knowledgeable generally about child health, may not be nutritionists. Some faculty prefer this type of audience, as it pushes students toward a slightly more formal approach, often creating a tone that faculty feel is more appropriate for an academic or professional setting. Nonetheless, the assignment still requires students to adopt a degree of authority; they must still define terms, clarify relevant criteria, carefully examine their logic. Further, because each student chooses
Beyond Paper Assignments

What if you're in a field where paper assignments aren't necessarily the norm? Or what if the students at your institution aren't particularly inspired by writing assignments, even nontraditional ones? What if you've seen enough papers to last you a lifetime, and you're just looking for something new?

Oral Presentations

Almost everything we're talking about here can easily be shifted to other genres and disciplines. Consider, for instance, a class where the major requirement is an oral presentation. Normally this means a student who has researched a topic related to the course stands up and gives a talk to a group of other students who've also researched a topic related to the course. Although this sort of assignment can work well in some situations—for example, when the students listening are particularly polite, or the student speaking has chosen a topic that has some intrinsic appeal to the audience—very often, presentations like this have an arbitrary, meaningless feel to them: The students are not doing this because it truly matters but because it's expected.

What happens, though, if we change the implied audience for a presentation to a group of people who really don't know much about the topic and have some intrinsic interest in it? It's possible, in other words, to reconstruct the rhetorical context so that the speaker must take authority over the spoken content and what's being discussed really matters. I'm reminded of a workshop I did years ago where, as we were discussing alternative assignments, a woman in the back of the room suddenly shouted, "Oh!" I stopped what I was doing, and we all looked at her, wondering if she'd had a heart attack. She hadn't. What she'd had was an epiphany. "I teach gender studies," she told us. "And every semester I have students give talks on male gender roles. And every semester it's the same old thing, the choir preaching to the choir. What if—" and here she paused, for she had our attention now, "instead of having them talk to the class, I had them pretend they were talking to a group of 12-year-old boys?" And then everyone in the room said, "Oh!" Because we got it now too. In the first scenario, student talking to students, nothing really matters. In the second scenario, students talking to tween boys who are about to begin their own exploration of the varying models of maleness, everything matters. The latter speech, that talk, is an opportunity to change individual lives, social expectations, and society as a whole. Suddenly presentations that had felt like meaningless academic exercises felt very real, very significant, and very powerful.

Designing Your Course: Step 8

1. Take a moment and go back to the course you are working with. Brainstorm a list of general population audiences that might have an interest in the content, ideas, and methodology of your course. Keep in mind that brainstorming means putting down every idea that comes into your head. Do not edit or censor at this stage; there will be plenty of time for that later.

2. Still thinking about this course, brainstorm a list of nonspecialist audiences who might be interested in your course content and ideas, that is, audiences that are informed in general about your discipline or field of study but who likely won't have particular knowledge of the nuances of your course topic.

3. Set these two lists aside until the end of this chapter.
Frankly, at moments like this the whole issue of authority doesn’t really seem very important in comparison to our desire to make learning powerful and purposeful. But that’s the point: By shifting rhetorical focus, we’re creating a situation that transcends mere academia by putting students in challenging situations where things matter. Kind of like life.

**Comprehensive Projects**

The following instructions are from another assignment, developed by Zach Adams, formerly of Wesley College. They come from the major project for a first-year seminar on art and community murals:

Create a proposal for a local public mural in the Dover area for possible grant/funding applications. Include and prepare a rationale for a description of the project, the long-term goals for community impact, several means of creating community input and involvement, and a budget.

(Z. Adams, personal communication, January 8, 2014)

There’s so much to like about this assignment. Most obviously, it asks students to assume authority in a very real way: They are working in the community now with real people, a real goal, and a real impact. This matters. The students must think about the needs of the Dover community so they can develop long-term goals for their project, learn about the various means of gathering community input for an art project, evaluate those methods, choose and rationalize an appropriate approach, conceptualize and rationalize an art project that would meet those needs, and develop a budget and a rationale. In other words, this project asks students to integrate multiple disciplines (art, sociology, mathematics), synthesize complex information from multiple sources, make meaning in the form of a new community mural, and do all this in a situation that has better and worse answers—but no certainty.

**Quantitative Reasoning**

That mathematics plays a role in Adams’s assignment is also important for several reasons. First of all, for most of our students, quantitative reasoning is usually going to matter in an applied way; that is, students will use it in their work for a nonprofit, a web design firm, or a car rental agency. Math matters, and this assignment makes that starkly clear to a group of first-year art students who at first may see mathematics as unnecessary. The students who take this first-year seminar will learn the value of mathematics to their career goals and may, as a result, approach any required mathematics courses with a higher degree of intrinsic motivation.

Second, I like that this assignment asks students to write about mathematics. They can’t simply put the numbers down and walk away. This is important, because as a lot of faculty who regularly teach quantitative reasoning will tell you, one of the biggest challenges they face is getting students to actually understand the ideas behind mathematical formulas. Students can do the math, but when the situation or the context changes, these same students find themselves at a loss; for example, how do they reconfigure a one-dimensional equation on a two-dimensional graph? Asking students to actually write about what they’re doing, to justify and explain their quantitative approaches, helps shift students’ roles from passive to authoritative (Bahls, 2012).

Consider, for instance, an assignment designed by Patrick Bahls (2012), in which, as students go through the semester and learn various concepts, they write a mathematics textbook for other students, providing “explanations of key course concepts as well as visual aids, examples, and exercises as appropriate” (p. 110). Think about the complexity of this; to explain key concepts, students must first thoroughly understand those concepts, then find the language to articulate those concepts to someone who is unfamiliar with them. To develop visual aids, students must shift their thinking from numbers and words to images, which requires a complex cognitive translation not only of language but also the medium. To develop examples and exercises, students must step beyond what they’ve learned in the textbook and through discussion and lecture and create something entirely new, scaling examples and exercises in a developmental way to move their readers gradually from complete ignorance to understanding. Recalling Krathwohl’s (2002) taxonomy, clearly this project has students spending a great deal of time on the far right-hand side of the taxonomy, engaging in cognitively challenging acts. Although Bahls constructs this as a semester-long project (students do extensive and impressive work brainstorming, drafting, responding, and so on), he makes the point that it could easily be scaled back into a series of study guides or even *CliffNotes*.

A final quantitative example, drawn from the legendary physics professor Thomas Knorr at Wheeling Jesuit University, concerns a midlevel lab for physics majors (S. Vargas, personal communication, June 15, 2016). Knorr assigned each of his students a wicked problem they were required to solve completely on their own. For example, one student was asked to develop a method for calculating the ratio of buildings to lawns on campus, another was asked to calculate the number of blades of grass on campus,
and another, the volume of water flowing in a nearby stream. In each case, students were to develop a method for determining the answer, provide their calculations, and provide a final number. They had absolutely no supervision, although Knorr was available to answer questions and offer support, which was good, because even his cohort of very good physics majors found themselves struggling—at least at first. There were no formulas for these problems, no answers at the back of the textbook. The Internet didn’t exist then, but even if it had, it wouldn’t have helped. Eventually, though, his students learned to calm down, think about various problems they’d dealt with in the past, and think about how they might adapt the methods they used to solve those problems to the current issue. They experimented. They bombed. Then they experimented again, eventually finding a fingerhold, then a foothold, and then a solution. Maybe it was not a perfect solution, maybe not the solution an experienced physicist would have found, but that wasn’t the point. The goal here was to place students in situations that replicated the kind of work real physicists do in the lab. Not telling them, “Here’s a problem, here’s a protocol, now plug in the numbers,” but rather, “Here’s a problem. Now what?”

We can tell this is an authoritative assignment because it makes no difference whatsoever that the audience for the final project is the professor. After all, in cases like these, he is the uninformed audience. As one former student put it, “What I realized much much later is that it wasn’t about coming up with a correct answer. (Like Knorr actually knew the volume of dirt?)” (M. Carigen, personal communication, June 21, 2016).

Perhaps most important here are the results, that is, the students Knorr produced. As one of them told me, “In hindsight I realize Dr. Knorr was creating great problem solvers. He never gave a lab that was straightforward. By the end of the semester you were just ready for the impossible and were willing to stay up all night to make it possible” (S. Vargas, personal communication. June 21, 2016).

Blended Assignments, Poster Projects, and Real-World Audiences

It’s worth noting that although all these projects are constructed as hypothetical—in other words, students aren’t literally speaking to 12-year-old boys or writing to first-year math students—there’s nothing that says they couldn’t be realistic. For years, the major first-year writing exercise at the University of Vermont was to have each year’s students construct essays and readings for next year’s freshmen. Sometimes the shift to a real audience is just what a project needs to push students further into authority. Consider, for instance, my experiences teaching Composition Theory and Practice, a course that teaches people how to teach writing. In early iterations of the syllabus, the final project was fairly standard: Students were asked to choose a population with literacy needs, such as high school seniors preparing for college, create a course of study for those students, and write a rationale explaining the choices they’d made as they completed the project.

On the face of it, this is a fairly authoritative assignment. Students are looking at a wicked problem (teaching is always a wicked problem) and constructing new ideas for approaching it. Certainly, some of the projects I was given were pretty good, but even the better ones were—how can I say this—powerfully mundane? Students were clearly doing what was expected of them, but there wasn’t a lot of energy in their work. They achieved the desired ends, but there was no flair, no focus, no indication that students would leave the class and move into the world with a sense of urgency. And when you’re dealing with issues of language, identity, and power, this is rather troubling.

It also bothered me—and this is a trend that I see often in matters of authority—that the better projects almost inevitably came from the better students. When I asked students to engage in this authoritative task, the students who already had a sense of their intellectual and academic authority were fine, but those who did not—the B and C students, the nontraditional students, and the first-generation students—struggled.

This is not good. We are educators after all. Our goal is to educate—everyone. If we find ourselves in a situation where the best stay the best and the less stay the less, then chances are we’re not educating, we’re simply affirming the status quo. I don’t know about anyone else, but I didn’t suffer through seven years of graduate school so that I could leave things exactly the way I found them.

What I eventually did, in a moment of frustration, was shift the syllabus project from a completely written assignment to a blended assignment, one that combined mediums. The first part of the project—the construction of a course of study for a particular population—became a poster presentation (see Appendix A). What’s more, this poster presentation occurred in the student center, just outside the dining hall over the lunch hour. Further, I advertised it on the campus website. My students were expected to show up looking professional, ready to explain the choices they’d made while designing their courses to anyone who stopped by. And people did stop by: friends, classmates, professors, even the college president. And they asked questions. I remember one group that designed an entire syllabus around digital literacies, arguing that this was a great way to reach disengaged high schoolers. A professor from the computer science program, known for his intelligence and his no-nonsense approach in the classroom, came to the session and
read the group's poster. Once he finished, he proceeded to grill the students, hammering them with question after question for almost 20 minutes. Standing back, I felt nervous for the group. They'd only been in my class for 13 weeks and all were still learning this stuff. Once the professor left and the session was over, I checked in with the students. "That looked a little rough," I said. "No," they replied, almost in unison. "It was fantastic. He really cared!"

Consequently, the students cared. In the weeks running up to the presentations, students would cluster at the end of class, swapping ideas and figuring out when to meet. I'd see groups in the commons late in the afternoon, sipping coffee and huddling over their laptops. Even the individual rationales students wrote for their projects had more energy, were more engaged and engaging. I saw students from all levels develop as thinkers and writers. Presenting students with real audiences in real situations sharpens even more that sense of urgency that can lead to authority: This is not a drill, not some meaningless exercise. What they're learning in this class and the things they do in this class matter beyond the end of the semester.

Videos and Other Digital Media

Another approach that invokes real-world audiences is video assignments. The basic premise here is that students create a short film incorporating some component of the course for an audience who would benefit from that content. For instance, I teach a first-year seminar on travel literature. In addition to reading and analyzing various travel narratives, my students also apply social theory and research on study abroad to our discussions. The final project for this course asks students to work in groups, sifting through the key ideas they've encountered over the course of the semester and developing a three- to seven-minute YouTube video for people about to study abroad, providing tips for a successful year (see Appendix B). The film must demonstrate complexity of thought about international and intercultural experiences and how they relate to learning and personal development. Students are encouraged always to consider their audience. Most college students won't watch a boring video, so humor is important, as is music of some sort. All films must include a list of sources that were used in preparation for the filming. Students are also required to write a carefully researched rationale that includes a clear thesis unifying the tips in the film, arguing the value of each tip, and contextualizing and analyzing all outside sources.

Key to the success of these films (several of which are good enough that I've actually sent them to our international education office) is the complexity of the task. Students have to evaluate multiple sources from multiple genres—some narrative, some academic, some theoretical, none of them particularly practical in a how-to kind of way—searching for ideas or the seeds of ideas that might apply to an undergraduate about to leave home for a long period of time. Then students must somehow synthesize these ideas into a cohesive structure, write a script, and edit it to a manageable size. Next, they must choose images to reinforce these ideas and music to fit the mood of the video as a whole and particular ideas more specifically. In doing this, they draft, receive feedback, revise, edit, draft, receive feedback, multiple times, continually deepening the level of thinking and the cohesiveness of the film as a whole. The project becomes very real, very meaningful—that is, very literally full of meaning. It matters.

The one thing students don't have to worry about as they create these projects is the technical aspect. The first time I had students create a video for a course, I brought in a specialist to talk about the various software and the nuances of film and sound editing. Halfway through his presentation, one of the students in the class who was a young poet and a notorious daydreamer, said, "Hey look! I made a movie." Then she turned her laptop around to show us that she had indeed created a short film, her first ever. Although claims that today's students are always and already digital natives have been overused, the fact is that most of the software for these kinds of projects is so available and so intuitive that it's difficult to form a group of students and not have at least two members already experienced in filmmaking.

The same can be said for website design programs and software. The Internet is full of cheap and reliable sites that allow students to design and launch their own websites. Because of this, there's no reason that this same assignment, or the assignment about literacy, creating a math book, or community murals, couldn't be reframed into a website assignment. Here again, the idea that what the students are creating is open to the world beyond the classroom gives the work more relevance and pushes students toward greater authority. After years of formalized and carefully controlled education, students are able to half listen to our words or skim over our comments fairly easily. The first time they create a Twitter account, blog, or a website related to a course and get retweeted or reposted or simply receive a comment from a real person not in the academic world is electrifying to them.

Research

One thing I haven't discussed explicitly thus far is the role research plays in assignments of this kind. As academics, we tend to overassign research and research-driven papers, which is not surprising, given that for most of us this is the accepted genre. This can be a problem, though, because there are times
when our goal is for our students to perform some of the basic functions of our discipline, such as reading carefully, summarizing effectively, performing a lab experiment, or creating a programming algorithm. Assigning these tasks while simultaneously requiring outside research may allow students to avoid demonstrating the skills we're really after, burying their own thinking in a blizzard of outside quotations and references.

Obviously, though, research and all it entails is a crucial skill for all of our students. The world is full of data, information of varying quality and relevance. With the 24-hour news cycle, the Internet, and social media, everyday citizens are bombarded with rumor pretending to be fact, innuendo based on nothingness, and very real and pertinent ideas that threaten to get lost in the avalanche of trivia. We need to create graduates who are capable of separating the real from the fake, the relevant from the trivial. They need practice, while still in college, in sifting through and evaluating the quality of varying sources and seeing the connections and disagreements that exist among these sources.

The problem from an authority-based standpoint is that often students writing traditional research papers are overreliant on their outside sources. Indeed, John Bean (2011) has coined the term data dump (p. 27) to describe student papers consisting almost entirely of quotations from outside sources. This approach allows writers to hedge their bets. They can't be wrong, their thinking goes, as long as everything they say is based on something someone else said. For most students, this feels like a much safer approach than actually throwing out some of their own ideas. Why risk that?

Very often, then, students who are asked to incorporate research into their work are never put into the position of having to make decisions in contexts of uncertainty. Which is fine, except for the fact that life is made up of uncertainty, and we want to prepare our graduates for life.

One effective response to this dilemma is illustrated nicely by a poster project designed by Diane Parham, a professor of occupational therapy at the University of New Mexico (D. Parham, personal communication, March 14, 2016; see Appendix C). In her graduate-level course on evidence-based practices, she requires a final culminating project in which students research and make presentations on a narrowly focused question. They might, for example, analyze tai chi versus balance training for the elderly or sensory integration intervention for children with autism. Each student must find a minimum of five scholarly articles and briefly justify the search strategy they used to locate those pieces. They must also summarize the findings of those pieces, explaining their relevance to the overall project.

All of which is well and good, but from an authority-based standpoint, Parham's next move is crucial. Students are expected to answer the question,

“So what? . . . In other words, now that you have studied these articles, how should their findings, all together, best be used to guide clinical practices with respect to your question?” Parham then presents her students with the following series of questions to help them as they construct a guide to evidence-based practice:

- What specific interventions in occupational therapy do these studies support or not support?
- Given the levels of evidence of these research studies, with how much confidence can you draw conclusions about practice from them?
- To which populations might findings from the studies be generalized or not generalized?
- If you were in clinical practice in an area related to your poster, how would your knowledge of these studies, taken all together, influence decisions you might make about using the intervention for particular people? Given our knowledge, is there any way you can identify who might be a good candidate versus not so good of a candidate for this intervention?
- How might the knowledge that you have gained be used to guide practice policies in the workplace or in public health?
- What gaps in knowledge exists, as related to your clinical question? What do we still not know that would be important to find out, in order to answer your clinical question? (D. Parham, personal communication, March 14, 2016)

Although some of these prompts allow a basic summary of the outside sources (the first, for instance), what's notable here is that most of the questions push students off the cliff of safe, reliable outside sources into the open air of uncertainty. How do we identify who is or isn't a good candidate for a particular intervention? How might this research lead to changes in public or workplace policies? What else do we need to understand as we move forward with work in these areas? All of these, to varying degrees, require students to make meaning, to go beyond the research and construct new understandings of a question. Indeed, even the first question about interventions could require some integration, as students might draw from other areas of study in the field to find interventions that would work relative to their research question.

The point here is that even when we require research, and we should require it periodically, there are ways to set students up to assume authority, explicitly saying, “The first half of your paper works to summarize and contextualize research; the second half of your paper should demonstrate your
ability to take this information beyond what's already been said, to develop new solutions or ways of doing things.

**Signature Work**

Just how empowering might such an approach be? Consider a professor I met at a workshop, who proposed a series of papers for a typical first-year transfer-level composition course at a community college. Karen Wong of Skyline College in San Bruno, California, has had a great deal of success working with underrepresented and underprepared students and wanted to develop a course that taught crucial skills like writing and quantitative reasoning while simultaneously developing in her students a meta awareness of the challenges they face in gaining a university education—as well as some of the ways they might overcome those challenges (K.E. Wong, personal communication, June 16, 2016).

The first assignment she gives students asks them to write their educational narrative, describing what contributed to or hindered their success. Clustering all of these narratives together allows the class as a whole to "ascertain patterns" of helps and hindrances. This in turn leads nicely into a data analysis assignment, wherein students produce a paper analyzing outcomes data for disproportionate impact, exploring possible explanations for this impact, and providing graphs to explain this impact to more general, less-informed audiences.

The next steps in the sequence involve researching and proposing solutions to these problems, ending in a pitch to a relevant audience, such as first-generation students, teachers, administrators, or Bill and Melinda Gates. "For instance," Wong said, "if their intent is to mentor first-generation students, they might design a YouTube video." Every pitch comes with an independently written rationale "explaining why they used that medium, and what informed what they included and how they addressed their audience—in short, the purpose, the audience, and the genre" (K.E. Wong, personal communication, June 16, 2016).

There's so much to like in this proposal. Writing, quantitative reasoning, meta learning that leads to solutions that might help not just the audience but the writers themselves, all in a context where students must take responsibility for their learning, where they're placed in a position of authority and where they're required to struggle with and understand the concepts they're dealing with to be able to explain those concepts to others.

In many ways this assignment mirrors much of the recent talk in educational circles concerning **signature work**, which, according the Association of American Colleges & Universities (2015), is a semester-long (at least) project in which a student uses cumulative knowledge to "pursue a significant project related to a problem she or he defines" (p. 2). Signature work can occur in capstone courses, undergraduate research, internships, or in the creation of an ePortfolio. The important criteria are first, that it's student led, dealing with unscripted (wicked) problems, and second, that it's cumulative. Indeed, most institutions tend to regard signature work as occurring in a student's later years, which makes sense as that allows students to accumulate knowledge and the skills necessary to tackle a complex problem—as well as, I would argue, the authority necessary to approach such complex problems.

Of course, if we want college seniors to tackle signature work, then we need to prepare them for that work throughout their college careers, starting as Wong does in first-year seminars. After all, done right, signature work tackles complex, messy problems. Addressing these problems requires not just high-order thinking but a strong sense of one's own capabilities, a willingness to take risks and dive in, asking questions and stepping back and thinking and trying and failing, and then trying again. This cannot be developed in a single course late in a student's career.

I find a great deal of reassurance in the fact that when I visit campuses or speak at conferences, inevitably members of the audience already have some pet essays and projects they assign that push students forward authority. For me this foregrounds the fact that this whole concept is not new—many of us already do it sporadically, occasionally, or even consistently. We already recognize that when we place students in positions of authority, where the problems aren't static or simple and there are no clear solutions, that's when they do some of their best work. The goal now is to find ways to do this more often and more deliberately. This leads us to the question of how we ask questions, or in other words, to authoritative exams.

But first, please take a moment to solidify some of your thinking about assignment design with the following exercise.