Design Thinking and the Wicked Problem of Teaching Writing

Carrie S. Leverenz*

Department of English, TCU Box 297270, Texas Christian University, Fort Worth, TX 76129

Abstract

In this article I explore how the tenets of design thinking as described by Richard Buchanan, Nigel Cross, Lucy Kimbell, Tim Brown and others might be applied to writing instruction. I argue that design thinking, a human-centered approach to designing innovative solutions in response to wicked problems, can help close the gap between writing inside and outside of school and prepare students to participate in a future of writing. More specifically, I recommend that we apply design thinking to writing classes by 1) teaching writing as a design process, 2) creating wicked writing assignments, 3) encouraging writing in teams, and 4) fostering experimentation through prototyping. © 2014 Elsevier Inc. All rights reserved.

Keywords: Design thinking; Innovation; Writing instruction; Design process; Wicked problems; Prototyping; Team writing

“Literacy teaching is not about skills and competence; it is aimed at creating a kind of person, an active designer of meaning, with a sensibility open to differences, change, and innovation.” Bill Cope & Mary Kalantzis, “Multiliteracies”: New Literacies, New Learning

“Above all, think of life as a prototype.” Tim Brown, Change by Design

As a writing teacher, I find myself in a challenging position. On the one hand, given the complexity—and power—of our current communication resources, I’m convinced that students need writing instruction now more than ever. At the same time, I wonder whether teaching academic writing is a dying—or already dead—enterprise. More specifically, I’ve come to believe that the field’s dominant approach to teaching composition, as codified in documents like the WPA Outcomes Statement for First-Year Composition (Council of Writing Program Administrators, 2008), is in need of dramatic change if we want writing to be important in students’ lives long-term. As Kathleen Yancey (2004) remarked in her CCC address, which has become a call-to-action for many of us, “Never before has the proliferation of writing outside the academy so counterpointed the compositions inside” (p. 298).

Recently, our professional leadership has taken steps to update and broaden our understanding of the kinds of composition that should be taking place inside our classrooms. In January 2011, a coalition of NCTE, CWPA, and NPW members published “Framework for Success in Postsecondary Writing,” a statement that described “the experiences, knowledge, and habits of mind that students need to succeed as they begin the first year of college writing” (O’Neill, Adler-Kassner, Fleischer, & Hall, 2012, p. 520). As the Framework authors explained, this statement is intended to
counter the narrow view of writing expressed in the Common Core State Standards (CCSS) for English Language Arts, which as of Fall 2013 had been adopted by 45 states (O’Neill et al., 2012, p. 522). The purpose of the CCSS (Common Core State Standards, 2012) is to articulate standards that will ensure all students are career or college-ready. Toward that end, the CCSS writing standards focus primarily on argumentative and informational writing, with the exclusion of creative and expressive writing from the CCSS having come under particular scrutiny.1 In contrast to the CCSS, the Framework for Success in Postsecondary Writing (2011), while naming values traditionally associated with academic writing as represented in the 2008 WPA Outcomes Statement (rhetorical knowledge; critical thinking, reading, and writing; flexible writing processes; and knowledge of convention), also identifies eight “habits of mind” that potentially foster a wide variety of writing practices beyond the academic: curiosity, openness, engagement, creativity, persistence, responsibility, flexibility, and metacognition (p. 527–29). Arguably, the “Framework for Success in Postsecondary Writing” thus represents its own kind of counterpoint between creativity and convention. Additionally, in 2012 the Council of Writing Program Administrators (CWPA) began revising the Outcomes Statement to better account for the increasing presence of multimodal composing in writing classes—evidence that boundaries between academic writing and writing done outside of school are perhaps becoming less distinct. But given that the need to prepare students to write for college is the reason there is a CWPA (Rice, 2009; Strickland, 2011), it is not yet clear how far the CWPA will be willing to go in broadening its focus beyond academic writing. As a teacher concerned with my students’ ability to participate in a future of writing, I believe we need to question our complicity with this predominantly conservative educational mission. What students need to learn about writing is not just how to work within existing conventions but how to make them anew.

Toward that end, I want to consider how writing courses might be reimagined as opportunities for design thinking—a term popularized by practicing designers like Tim Brown (2009), CEO of the design firm IDEO. Design thinking refers specifically to a creative process engaged in by designers, which has been researched, theorized, and in some cases codified into an approach to problem solving applied to everything from designing a child’s toothbrush to improving how nurses handle the changing of shifts. In “Rethinking Design Thinking, Part I,” design researcher Lucy Kimbell (2011) characterized Brown’s version of design thinking in this way:

Design thinking and the designers who say they practice it are associated with having a human-centered approach to problem solving in contrast to being technology- or organization-centered. They are seen as having an iterative process that moves from generating insights about end users, to idea generation and testing, to implementation. Their visual artifacts and prototypes help multidisciplinary teams work together. They ask ‘what if?’ questions to imagine future scenarios rather than accepting the way things are done now. With their creative ways of solving problems, the argument goes, designers can turn their hands to nearly anything. (p. 287)

Many businesses and organizations have implemented design thinking in an effort to foster innovation and to counter an overreliance on traditional analytical approaches to problem-solving. But some in the design-business world, like Bruce Nussbaum (2011) of Business Week, have questioned the efficacy of design thinking as a “process trick” that promises to “produce change” but does not always deliver, pointing out that in attempting to package design thinking for use by businesses, “it was denuded of the mess, the conflict, failure, emotions, and looped circularity that is part and parcel of the creative process” (para. 7). Designer Donald Norman (2010) expressed similar reservations, calling design thinking “a useful myth,” because although the term has elevated the work of design to be more than the making of pretty things, what designers do is not unique or special. For Norman (2010), design thinking is just a term for what creative people have always done—“break the rules; go outside the existing paradigms, and think afresh” (para. 3). In “Rethinking Design Thinking” (2013), Norman (2013) reversed his position somewhat, acknowledging that although the activities associated with design thinking—deep immersion in a problem that results in empathy with others, ongoing experimentation and critique, and an emphasis on questioning—are practiced “by all great thinkers,” what sets design thinking apart is “an attempt to teach [design] as a systematic, practice-defining method of creative innovation.” In other words, design thinking is valuable as a means of teaching what is “intended to be the normal way of proceeding, not the exception” (para. 11).

---

1 The widely circulated statement by Common Core architect David Coleman, “As you grow up in this world, you realize people really don’t give a shit about what you feel or what you think,” epitomized this rejection of writing for self expression. To view the presentation or transcript that includes this quote, see New York State Education Department (2014).
If design thinking can indeed help anyone approach problems more creatively, I want to consider how design thinking might help students see writing, even academic writing, as a creative act of making, one in which writers make not only texts, but themselves and their worlds. As I hope to show, design thinking has the potential to help address a number of the challenges of college writing instruction, especially the tension between creativity and convention that I noted above. For example, it eliminates the question of how to fit multimodal composing into writing classes since it focuses on designing solutions to problems rather than creating forms for their own sake. It also privileges the new and encourages the use of conventional resources in unexpected ways. By focusing on creative responses to complex problems, design thinking has the potential to increase student engagement in any writing they’re asked to do. And as a creative process, design thinking allows for a sense of agency in a context where no one is ever fully in control. Design thinking also encourages risk and rewards failure as the very means by which we learn what it is we want to do. Notably, design thinking is transferable to any situation in which old ways of doing things have become ossified, thus stifling change.

Arguments for the relevance of design thinking to composition are not new, but they have not yet had the influence that advocates might have hoped. As early as 1989, in an article in CCC, Charles Kostelnick explored the parallels between research on design thinking within design studies and research on the writing process within composition in order to demonstrate how similar findings could begin “laying the foundation for a cross-disciplinary theory of the creative act” (p. 268). Kostelnick (1989) noted that both design thinking and writing process research were motivated by a desire to understand what was often treated as a subjective, unconscious creative process, with both disciplines focused at first on developing a linear stage model. Close observation of practitioners of both design and writing led researchers to abandon attempts to define fixed stages and to instead study the problem-solving processes of individuals in a search for commonalities. As Kostelnick (1989) reported, such research led to a number of influential findings: that designers and writers discover the problem in the process of trying to solve it, that being conscious of the process increases the chance of success, that audience is an important factor in problem definition, and that the creative process is iterative or recursive rather than linear (p. 269). In another parallel shift, both design studies and composition studies began to recognize the importance of context in shaping how designers and writers understand and respond to tasks, making both highly rhetorical acts. Kostelnick (1989) concluded his comparison by noting that for both design and writing, the ultimate test of process research is its relevance to practice. When linear models of design thinking failed to work in real design contexts, the models were abandoned. Kostelnick (1989) called for a similar accountability in composition.

In 2009, Richard Marback again offered design thinking as a new paradigm for composition in his CCC article “Embracing Wicked Problems: The Turn to Design in Composition Studies.” Marback (2009) identified what he saw as a “centripetal interest in design” as having the potential to unite the field by “reinvigorating practical issues of agency” (p. 398). For Marback, a turn to design would help composition fulfill its mission to teach students to do things with words (and other language resources) in spite of the limits of human agency. Drawing heavily on the work of design theorist Richard Buchanan, Marback found compelling the notion that design problems—including those that might be addressed through writing—are “wicked problems,” contingent and ambiguous and thus “never finally solvable” (p. 399). For Marback, seeing writing problems as wicked problems requires “moving beyond procedural problems of composing” to “problems of responsiveness and dilemmas of judgment” (p. 400) that involve not just the writer-designer, but also the text being created and the various others who interact with that text. In Marback’s view, “The wickedness of designing is that it is more than merely the making of an artifact; it is an embrace of ambiguities in our responses to each other with and through our artifacts” (p. 418).

Marback’s concept of design as an engagement with artifacts in a complex social context aligns well with that of designer Kimbell (2012), who argued for a practice approach to design that “decenters the designer as the main agent in designing” (p. 142). Although Kimbell’s research focuses primarily on design in professional contexts, as someone who teaches design to MBA students and specializes in designing services in the context of public policy, she has noted

---

2 I regret that James P. Purdy’s (2014) excellent “What Can Design Thinking Offer Writing Studies?” appeared while this article was in press and thus could not be considered here. Purdy similarly examined the relevance of design thinking theory for the field of writing studies, providing a useful analysis and taxonomy of the various ways the term “design” has been used by writing scholars.

3 David S. Kaufer and Brian S. Butler’s (1996) Rhetoric and the Arts of Design explored in detail the ways in which rhetorical acts are acts of design, offering “a theory of written argument as original design and a philosophical justification of rhetoric as a productive design” (xvii). To do so, Kaufer and Butler analyzed the design of the Lincoln-Douglas debates. They did not address how we might teach writing or rhetoric as design.
the degree to which design is being called on to address a wide variety of complex problems and thus deserves to be understood more fully. In “Rethinking Design Thinking: Part II,” Kimbell argued that a “practice theory” approach to studying design “offers a way to see design activity as distributed across a number of different people and artifacts that together enact designing and designs” (p. 133). As Kimbell explained, the meaning of a design exceeds that intended by the designer and includes the designed object, the user’s experiences of the design, and the various contexts in which a design might be used over time. Kimbell summed up the consequences of assuming a practice approach to design: “practice theories switch the unit of analysis from individual actors or society and its norms, to a messy, contingent combination of minds, things, bodies, structures, processes, and agencies” (p. 141).

Kimbell’s view of design clearly parallels Marback’s in its insistence on shifting the focus from the individual who designs to the complex practice of designing in response to wicked problems that are irresolvable. Accepting this concept of design, however, does not mean that design thinking cannot be taught—or learned. Indeed, coming to understand that the meaning of a design act depends on a complex interplay of designers, the designed, and users of designs in multiple contexts is part of what one learns from engaging in design. Marback (2009) put it this way: “Learning design is learning a process of responding to others” (p. 418). All designers, including writers, must accept our limited control over the materials we work with and the contingent nature of the effects we wish to produce, even as we must continue to engage with those materials in an attempt to produce an effect. The fact that students need to learn to use writing effectively in spite of their limited control over writing is one reason the teaching of writing is also irresolvably complex. The position of composition within universities adds to its wickedness: it is a course we are required to teach and that students are required to take because it is assumed we can prepare them to write well in other courses, even though there is little evidence that such a goal is achievable. Here is where we writing teachers need to put on our design thinking caps and ask if this is even the problem we want to solve (Brown, 2009, p. 237). Instead, I propose that we redefine the problem this way: how can we teach writing so that students learn to use words and other language resources to define and respond in creative ways to problems they see as important?

1. Design thinking for everybody

The study of design thinking has a rich history, evolving along with the development of design as an academic discipline as early as the 1920s (Bonsiepe, 2007). Of special relevance here is what came to be known as the design education movement. In England, the importance of design to education was formally established in a 1976 report, “Design in General Education,” produced by London’s Royal Academy of Art at the request of Britain’s Department of Education and Science. Bruce Archer, Ken Baynes, and Phil Roberts (2005), who were actively involved in the movement, explained in their introduction to A Framework for Design and Design Education, that interest in the relevance of design to education was influenced both by cross-disciplinary research in human creativity and by a sense that the world was facing increasingly complex problems that traditional approaches to education were not able to address effectively (p. 4). According to Archer and his colleagues (2005), the Design in General Education study began as a grass-roots movement of teachers who were “gravely concerned about the relevance of education to the major problems facing mankind today—the quality of life, the urban environment, the use of physical resources and so on” (p. 13). In response to these concerns, the design education movement contributed two key insights. The first was that Design (with a capital “D”) deserved to be treated as a third leg of the liberal arts, “concerned with the making and doing aspects of human activity.” The second was that “all human beings share the capacity to make models in the mind and to use these models to shape their own and the world’s future.” In other words, “all human beings are able to design” (p.3).

In arguing for design as a liberal art and design education as of central importance for all students, Archer and his colleagues (2005) conceived of design as much more than making objects. Indeed, a proliferation of objects was part of the problem, according to those grassroot teachers who were becoming aware that education needed to be reformed in order to “meet the challenges posed by a world of consumerism, mass media, mass marketing, and emerging environmental and social problems” (p. 5). As those in the design education movement saw it, education could help students participate in a complex world because design activity was “as much about opening up new possibilities and creating new ‘meanings’ in the human environment as it was about solving problems defined in advance” (p. 5).

A similar argument for the potential of design thinking to open up meaning making was presented by The New London Group (1996) in their manifesto, “A Pedagogy of Multiliteracies: Designing Social Futures,” published in the Harvard Educational Review. Although The New London Group claimed “A Pedagogy for Multiliteracies” could help
students have more success in school, the authors had much broader aims for their design-focused literacy pedagogy, namely, to ameliorate the “vast disparities in life chances” among students globally in light of the “radical changes” occurring “in the nature of public, community, and economic life” (p. 61). For The New London Group, literacy instruction based on design was the best means of preparing all students to actively participate in an increasingly multicultural, multilingual, multimodal world:

Designing restores human agency and cultural dynamism to the process of meaning-making. Every act of meaning both appropriates Available Designs and recreates in the Designing, thus producing new meaning as The Redesigned. In an economy of productive diversity, in civic spaces that value pluralism, and in the flourishing of interrelated, multilayered, complementary yet increasingly divergent lifeworlds, workers, citizens, and community members are ideally creative and responsible makers of meaning. We are, indeed, designers of our social futures. (p. 89)

Though published two decades after the “Design in General Education” report, “A Pedagogy of Multiliteracies” likewise embraced Design (both publications capitalize the term) as a means of restoring student agency through acts of making in response to the problems posed by an increasingly complex world.

While Marback (2009) acknowledged the contributions of The New London Group in helping to bring the concept of design to composition, he nevertheless questioned their belief that students could take control of language resources and use them for their own ends. One might be tempted to assume that Marback has the benefit of hindsight and that if published today, The New London Group’s (1996) manifesto might make more nuanced claims about student agency. However, in a 2009 follow-up article, “Multiliteracies: New Literacies, New Learning,” Bill Cope and Mary Kalantzis reaffirm their belief in student agency and their commitment to creating “a literacy pedagogy which promotes a culture of flexibility, creativity, innovation, and initiative” (para. 21). Though they acknowledge the importance of providing students with a “critical understanding of the discourses of work and power” (para. 22), they nevertheless continue to argue for a kind of teaching “centered on learners as agents in their own knowledge processes” (para. 30) as key to the creation of “a more productive, relevant, innovative, creative, and even perhaps emancipatory, pedagogy” (para. 38). By teaching writing with a focus on creativity and innovation and on designing texts that contribute to designing the future, we can begin to address the concerns I expressed earlier—the deadness of teaching academic writing with a focus on conventions, a lack of student engagement in school writing, and our compliance with the limiting educational mission of maintaining academic standards. In the space remaining, I’d like to offer some tentative proposals for how we might reimagine writing courses as a space for design thinking. Specifically, I propose that we adopt some of the features of design thinking described by Tim Brown (2009) in Change by Design toward the goal of helping our students become “active designer[s] of meaning, with a sensibility open to differences, change, and innovation” (Cope & Kalantzis, 2009, para. 38).

2. Teach writing as a design process

Design thinking, as the term is used by the designers I’ve cited, is primarily a problem-solving process. (To see design thinking in action, watch Tim Brown’s IDEO firm redesign a shopping cart in this ABC story: http://www.youtube.com/watch?v=pVZ8pmkg1do&feature=related) One concern, then, when importing design thinking into writing classes is whether an emphasis on problem solving offers an overly limited conception of writing. Teaching writing as a problem-solving process is, one could argue, an outmoded idea, popularized during the heyday of cognitive process research in the 1980s but having fallen out of favor, more or less, by the early 1990s. (Linda Flower’s popular textbook, Problem-Solving Strategies for Writers, went out of print in 1993.) Perhaps one reason for our rejection of writing as problem-solving was that our conceptualization was oversimplified, represented as a series of steps gleaned from experimental protocols of writing that were stripped of context. It was also imagined that effective writing could solve problems. In contrast, a design thinking approach to problem-solving recognizes both the messiness of the process and the incompleteness of the results, which are highly dependent on the interrelatedness of designers, objects, materials, users, and contexts. Using writing to work on wicked problems, to conceptualize writing as a design practice in the sense used by Kimbell (2012), is certainly not simple. In fact, it is the complexity of the problem-solving process that makes it engaging and has the potential to increase our sense of agency or creative
capacity. As Brown (2009) observed, “complexity is the most reliable source of creative opportunities” (p. 86). In his 2011 book Design Thinking, design researcher Nigel Cross reported that expert designers actually reformulate tasks to make them more complex and that hard problems produce more “generative reasoning” (pp. 146–7). Additionally, learning how to work on hard problems in a creative way is a skill that can transfer to future writing situations if students are made conscious of and given opportunities to reflect on what they’re doing. Cross (2011) praised Donald Schon’s theory of reflective practice, also widely cited among compositionists (See especially Yancey’s [1998] Reflection in the Writing Classroom), as foundational to understanding the importance of metacognition in the design process. According to Cross, Schon demonstrated that design “proceeds as ‘a reflective conversation with the situation.’” Faced with a complex problem, designers must frame the problem, pose “what if moves, and then reflect on the consequences of that move, which shapes their understanding of the problem and subsequent moves” (Cross, p. 23). To imagine writing as problem solving in this sense does not oversimplify writing but acknowledges its complexity.

Another notable element of design thinking as a problem solving process applicable to writing is its explicit valuing of divergent thinking, a key to fostering creativity. The objective of design thinking, in Tim Brown’s (2009) words, is “to multiply options to create choices” (p. 67). In other words, to arrive at the unexpected or unconventional idea, we must generate many ideas. In general, writing students are not taught to approach a writing assignment by proposing multiple possible solutions. Instead, as Brown pointed out, “Westerners are taught to take a series of inputs, analyze them, and then converge upon a single answer” (p. 66). Many creativity theorists denounce traditional schooling for the ways in which it disciplines students to seek the one right answer, thus limiting both what students can learn and what they can produce. (See, most famously, anything by Sir Ken Robinson, reportedly the most watched speaker on TED.com, especially “Changing Education Paradigms” [2010].) The formulation of multiple potential solutions that are as different as possible, fully accepting as part of the process that most ideas will be rejected, is what leads to a better conceptualization of the problem and thus a more innovative design. Cross (1982) found in his earliest empirical studies of design processes, that “the designer has to learn to have the self-confidence to define and redefine and change the problem-as-given in the light of the solution that emerges from his mind and hand” (p. 224). Ultimately, a design will be chosen, developed, and implemented, but not without an intense period of experimentation. Unfortunately, as Bruce Archer noted as early as 1979 and the New London Group pointed out again in 1996, traditional formal education focuses much more on teaching students to narrow possibilities by applying pre-existing standards than on encouraging them to embrace the new and untried.

In addition to valuing divergence and thus expanding students’ capacity for approaching problems in unexpected ways, design thinking involves abductive or constructive reasoning, which requires bringing together partial or contradictory evidence and drawing an incomplete but workable conclusion from it. Cross (1982) argued that this form of reasoning has been largely neglected in traditional liberal arts education (p. 225). Brown (2009) also observed that creativity requires the synthesis of unlikely components, referring to this capacity as “integrative thinking” (p. 85). As he explained it, “Integrative thinkers know how to widen the scope of issues salient to the problem. They resist the ‘either/or’ in favor of the ‘both/and’ and see nonlinear and multidirectional relationships as a source of inspiration” (p. 85). Most students aren’t familiar with an integrative approach to problem solving, given the ways schools compartmentalize subjects. Having the school day broken up into brief, discrete units also teaches students to complete tasks efficiently, making them impatient with messy processes. Brown admitted that “insofar as it is open-ended, open-minded, and iterative, a process led by design thinking will feel chaotic to those experiencing it for the first time.” But he also noted, “predictability leads to boredom” (p. 17). In contrast, design thinking allows for the unexpected because it is “fundamentally an exploratory process” (Brown, 2009, p. 16). And arguably, so is most engaged writing. Unfortunately, college writing instruction, with its concern for uniform evaluation standards and the use of grading rubrics worked out in advance, can limit the kinds of writing students may produce, thus reinforcing students’ inclination toward convergent thinking. Teaching writing as a recursive process of defining problems and proposing divergent solutions could lead to more engagement.

3. Design wicked assignments

How can we teach writing in ways that encourages—and rewards—more divergent thinking? One way to start is by making sure writing assignments are, like design problems, wicked, in Richard Buchanan’s (1992) terms: “ill-formulated, where the information is confusing, where there are many clients and decisions makers with conflicting values, and where the ramifications in the whole system are thoroughly confusing” (p.15). Many of us would acknowledge
the wickedness of most real life writing tasks, but as teachers our impulse is often to take the wickedness out of writing assignments—we make our expectations as explicit as possible in order to avoid confusing or frustrating students. Obviously, confusion and frustration do not in and of themselves lead to creative engagement in complex problem solving; rather, we tolerate these unpleasant feelings because we are engaged in addressing a problem that we care about or because there is something compelling at stake for someone. But most of us also know the pleasure of working on a hard problem long enough that we ultimately find a way to address it. By eschewing easy or obvious solutions, wicked problems require us to think creatively about the problem as well as the solution. As a result, we come to own the problem—as our vision—rather than merely fulfilling someone else’s idea of what should be done.

Writing assignments that foster design thinking should represent real design problems, ideally growing out of some external exigency—something that needs to be done—and allowing for many possible responses, few of which are easy or obvious. Offering students more open writing assignments (open subjects, open forms) will not automatically make them more engaging, since such assignments violate the assumed school contract—tell me what to do so I can do it and be successful. Grading rubrics can also reinforce the message that the purpose of writing assignments is to do what teachers specify. Admittedly, students take classes and complete assignments in order to learn, but if one of the things we want students to learn is how to use writing to design the future, we need to reimagine writing assignments and forms of evaluation that can lead to that outcome.

Making writing assignments more like design briefs is a place to start. Design briefs share some characteristics of typical writing assignments but also differ in important ways. A design brief is the initial description of what the client wants or needs the designer to create, specifying the outcomes of the design—what the design will achieve—but not the design itself, which is what the designer is being hired to provide. Brown (2009) defined a good brief as “the ideal mix of freedom and constraint” (p. 24). If a client asks a designer to create a product or experience for others, the intended user or audience is one constraint that will be specified. Just as important are constraints like budget and timeline. Most design briefs include competing constraints, specifications that are difficult to meet completely, which is part of what makes designing a wicked problem. But as Brown observed, “Without constraints design cannot happen. The willing and even enthusiastic acceptance of competing constraints is the foundation of design thinking” (p. 18). One thing that makes design thinking so applicable to writing is that writers, like designers, are typically creating something to meet objectives set in part by someone else (a teacher, a boss, an editor, a reader). Neither the designer nor the writer is completely free. There are the normal material constraints—the affordances of different media, what The New London Group (1996) called “Available Designs”—but in a design brief there are also constraints that grow out of the problem at hand. When Target, the discount department store, asks a designer to create a functional and stylish sofa that can be sold for $100, the low price point becomes a constraint that competes with the other requirements of functionality and style. Or when the process for going through security at an airport is being redesigned to improve efficiency but also lessen passenger frustration, these competing constraints, according to Brown (2009), foster creativity. To elicit design thinking, writing assignments must have the right blend of freedom and constraint. Unfortunately, as teachers we often include constraints that are meaningless in relation to the problem we are asking students to address, derived out of habit (MLA citation style) or a desire for uniformity (Times New Roman 12 pt, double spaced) or a concern for how long it will take students to complete an assignment or for us to grade it (no more than five pages). These kinds of constraints can inhibit rather than stimulate a creative response since they send the message that rules exist so that students will follow them, not because they are integral to the problem at hand.

In contrast, meaningful constraints offer students opportunities for inventiveness. In “An Inconvenient Tool: Rethinking the Role of Slideware in the Writing Classroom,” Laurie E. Gries and Collin Brooke (2010) described how the constraints of having to translate a research project draft into a Pecha Kucha presentation (a slideshow made up of 20 slides each set to automatically advance every 20 seconds) strengthened students’ writing by requiring them to identify and represent only the most important ideas.4 The constraint posed by having to translate writing into visual representations also led many students to think about their research in new ways (p. 23). As Gries and Brooke explained, “When we ask students to engage in presentation design, many engage in visual thinking, which often triggers creative potential not accessed in print-based composition,” noting the lack of attention to visual thinking in composition

4 When I required a Pecha Kucha presentation rather than a draft in a recent graduate seminar, students commented that though they found the assignment difficult, it did help them identify a focus for their seminar papers by leading them to a central metaphor or image that represented their argument.
studies (p. 24). Students in a writing class who are asked to translate their ideas into images may initially feel frustrated by having to think differently about their work, but the constraints of the Pecha Kucha-style presentation, created by architects looking for a way to enable people in the design community to share their ideas with a peer audience quickly, make sense. They also elicit design thinking. Of course, while specifying the problem that needs to be solved for what audience and within what constraints, a design brief must leave room for the inventiveness of the designer. Brown (2009) insisted that a design brief should allow “serendipity, unpredictability, and the capricious whims of fate,” (p. 23) something that most writing assignments do not seem to do. But if we can build writing assignments in which students are expected to reformulate the problem as they work to respond to it, perhaps some serendipity will be possible. These words from Brown seem relevant to both writers and teachers of writing: “If you already know what you are after, there is usually not much point in looking” (p. 23).

4. Write in teams

As ethnographic studies of designing have revealed, an important aspect of design ability is that of “reconciling the variety of interests” that come together around a typical design project (Cross, 2011, p. 19). Given the inevitable interplay of designers, materials, objects and users, Cross (2011) argued that design is not just “a personal, cognitive process, but a shared, social process” (p. 20). Being able to manage differences in ways that enhance rather than harm the design process is an important skill in design thinking. The New London Group (1996) also saw productive engagement with difference as a necessary skill for designing social futures. Indeed, one impetus for their design-based focus on multiliteracy was their view that the world was becoming increasingly multicultural, multilingual, and multimodal (p. 61), “Diversity, in fact, has become a paradoxical universal,” Cope and Kalantzis (2009) observed, noting that

The kind of person who can live well in this world is someone who has acquired the capacity to navigate from one domain of social activity to another, who is resilient in their capacity to articulate and enact their own identities and who can find ways of entering into dialogue with and learn new and unfamiliar social languages.

In writing classes, practicing the “multi” in “multiliteracy” can be achieved, in part, through participation in the kind of teamwork that plays a critical role in the design thinking approach advocated by Brown (2009). While in many cases, the purpose of teamwork is to have enough human resources available to address complex problems, working in teams also improves the likelihood that more, and more inventive, solutions can be imagined. As Brown remarked, “Design thinking is the opposite of group thinking, but paradoxically, it takes place in groups” (p. 28). In spite of the intense focus on collaborative learning and writing by compositionists in the 1980s, and the now ubiquitous presence of small group discussions, peer response, and group projects in composition classes, writing classes typically assign and evaluate individual work. The increased pressure for outcomes assessment is one factor: we need to be able to document the performance of individual students. And many students and teachers still think of writing as primarily a solitary activity, an assumption reinforced by school culture. (As a senior English major said in one of my classes recently, “Group writing? I totally don’t get how that is possible.”) But if we want students to become design thinkers who respond to writing problems by asking “what if?” and imagining multiple solutions, then time spent writing in teams, with appropriate support from teachers, can help.

Composition classes are well suited for developing the kinds of interdisciplinary teams that are especially good at fostering divergent thinking. Granted, students in introductory writing classes are not yet experts in the disciplines they will major in, but they bring with them a wider variety of interests and skills than may be found among students in an advanced class in the major. For example, enrolled in my recent sophomore-level required composition course were students majoring in graphic design, international relations, nursing, finance, strategic communication, and writing. It’s easy to imagine how these students, if invited to bring their prior experience and training to bear on a complex writing problem, would be poised to generate a variety of possible solutions. One key to maximizing different perspectives within teams is that team members must know that their differences are valued. They should be encouraged to think differently from each other and to push themselves to think differently than they might typically do. Toward that end, teachers must help students feel confident about what they can bring to the table; they must also organize work in ways that reward difference and multiplicity—divergent not convergent thinking. At IDEO (About IDEO, 2014), for example, brainstorming is structured to maximize idea generation, with the rules literally written on the walls: “Defer judgment; Encourage wild ideas; Stay focused on the topic; Build on the ideas of others.” Brown deemed this form of brainstorming “a structured way of breaking out of structure” (p. 78). Also important to the productivity of teams is a
commitment to shared work, a “collective ownership of ideas” (Brown, 2009, p. 28). Admittedly, persuading students to share ownership of their work can be a challenge, since school still socializes students to compete with each other, to critique rather than remain open, and to be wary of trusting others with their success.

Another reason teams are key to design thinking is because the human-centered approach to design advocated by Brown (2009) as well as by Buchanan (1992), Archer (2005), and the New London Group (1996), requires a deep empathy with others. To design an object, a text, an experience, a system that addresses the needs of others requires immersion in the problem, including detailed observation of how people live and work and how they are likely to use the design. For virtually every project IDEO’s design teams undertake an “intensive period of observation, informed by ethnographic research technique” (Brown, 2009, p. 46). Although students would clearly benefit from being able to fully immerse themselves in situations and audiences they plan to address with their writing, such close study may not be feasible within the constraints of a normal school schedule. Working in teams, however, can help students become more empathetic when team members differ from them in meaningful ways. Although empathy doesn’t automatically result from working with others, if students are taught and encouraged to be open to and build on others’ ideas as well as to hear and accept others’ observations about the potential effects of their ideas, they can learn something about what difference a different cultural location or disciplinary perspective can make.

5. Prototyping: Fail early to learn sooner

What if success were predicated on failure? What if students were expected to fail, even rewarded for failing, as part of the process of understanding the problem better and coming up with the best solution? In the commentary “Next Time, Fail Better,” English professor Paula M. Krebs (2012) described her experience of observing her colleague’s computer science class and discovering that “the work of coding, was an endless round of failure, failure, failure before eventual success” (para. 1). Just as surprising was her realization that “computer-science students are used to failing. They do it all the time. It’s built into the process, and they take it in stride” (para. 1). In contrast, she mused, students in the humanities “are not used to failure. They want to get it right the first time. Because it’s embarrassing to have to admit that you had to throw away two drafts before you got to your thesis” (para. 3). As writers, Krebs noted, we know from experience what Samuel Beckett meant in his famous line: “Ever tried. Ever failed. No matter. Try again. Fail again. Fail better” (para. 7). But how well do we communicate that message to students in our assignments and our assessment of their work? Failure is how we learn what it is we want to achieve. And failure is also how we learn to make things—including writing—work. Krebs’ use of the term “failure” suggests just how negatively we feel about not getting something right the first time, with the least amount of wasted effort. Failure might also be called experimentation. Design thinkers “share a basic attitude of experimentation. They are open to new possibilities, alert to new directions, and always willing to propose new solutions” (Brown, 2009, p. 71). In applying design thinking to writing, then, we must find a way to turn students’ fear of failure into excitement at the chance to experiment.

One way to do so is to treat drafting as more like prototyping. As Cross (1982, 1995, 2007, 2011) found, designers learn to solve design problems by trying out various solutions, first by drawing and then by building models—prototypes—as quickly and cheaply as possible. For Brown (2009) “a series of early experiments is often the best way to decide among competing directions” (p. 89). For prototypes to achieve their purpose, they must cost as little as possible in terms of time, material, and ego, because once someone is invested in an idea it will be harder to let go, more likely that resources will be spent too early and that opportunities to develop new ideas will be lost (Brown, 2009, p. 90). Prototyping in a writing class would mean asking students to produce not just drafts but different kinds of drafts or different ideas for drafts. They would be admonished not to commit to an idea until they had worked on several. The prototyping process also involves presenting these early, tentative, not fully functioning ideas for review by team members and even the potential audience one is designing for. At IDEO, design teams produce several prototypes, display them, and invite others to circulate through the room and identify with a sticky note which prototype they like the best. It’s also common for designers to offer clients several preliminary options as they work toward a solution. For example, in one assignment my colleague in interior design routinely gives, students develop three versions of a slide show in which the information stays the same but the design choices—font, color, arrangement of elements—change. Students present all three options and the class assesses which option works best.

Obviously, prototyping is similar in some ways to using peer response groups or class workshops to help writers learn about the effectiveness of their texts, but in writing classes the process of getting feedback and revising is largely focused on improving a single text rather than choosing among possible texts—or ideas for texts. Though students do
sometimes abandon drafts and start over, doing so can feel like a set-back. When Paula Krebs asked an honors student whose thesis she was advising how she felt about the revision process, the student characterized the experience as “degrading” (para. 6). To make drafting more like prototyping, we need to build in to assignments an expectation that students will work together to generate many ideas that will be developed just enough to share and compare them. By doing so, students learn that not settling for the first idea can lead to a more complex understanding of the problem and more interesting solutions. While many widely used invention activities such as stasis questions help students explore possibilities for approaching an assignment, a key to prototyping is sharing, in a public and comparative way, these possibilities. In addition to having students share potential outlines or different introductory paragraphs, students could be asked to work on their ideas in different media, through storyboarding or information visualization. Many design thinking researchers have noted the central importance to designers of thinking with their hands through sketching and modeling. Inviting writing students to represent their ideas visually can also help them break out of habits of linear, analytical thinking and allow them to see their ideas in new ways, as Gries and Brooke (2010) reported happened when students were asked to do Pecha Kucha presentations. As teachers continue to think about how to bring multimodal composing into their writing classes, prototyping can be an opportunity for students to play with modes in the service of working on ideas. By experimenting with a variety of forms, sharing their experiments with others, and then selecting the modes and forms they believe work best in a particular case, students truly become designers of writing.

6. A prototype for teaching design thinking

Although I have used elements of design thinking in a variety of writing courses at different levels, this semester is the first time I have attempted to fully integrate the strategies I identified above in my teaching of a junior-level class called “Cyberliteracy.” Focused on how digital technologies shape literacy, “Cyberliteracy” meets my university’s writing-emphasis course designation and thus includes a substantial writing component. In the course I require a number of traditional academic writing assignments (short weekly responses to reading, a cyberliteracy auto/biography, and a TED-style presentation), but in place of an individually authored research paper, I charged teams of students to research a problem related to cyberliteracy and then design an intervention. To introduce students to the design thinking process, I showed the video of the IDEO team redesigning a shopping cart, highlighting the similar steps that they’d be undertaking in their projects: researching their problem in order to define it, identifying a potential audience for their design, brainstorming multiple solutions using IDEO’s brainstorming rules, creating three prototypes to share with the class who would vote for the one they thought would work best, drafting the most promising design and testing it with potential users, then revising the design and presenting it to the class and three impartial judges who voted on the design they found most compelling. Although the intervention they designed did not have to be a written artifact, their design work was documented extensively in writing including a group process contract, a research plan and annotated bibliography, a problem definition draft, a description and analysis of their prototypes, a summary and analysis of a user-test of their design, and a final argument for the efficacy and feasibility of their design aimed at potential investors. Individuals also submitted a written self-reflection and group evaluation. The problems student teams chose to address included multitasking, cyberbullying, cell phone addiction, and employers’ surveillance of prospective employees’ social media participation, with design prototypes ranging from a cell phone app that reminds you how many minutes you’ve been using your phone, to a peer mentoring program on cyberbullying for middle schoolers, to a carnival on the campus commons where students can play games that demonstrate the effects of multitasking.

Applying the tenets of design thinking to what once was a research paper assignment yielded a number of learning benefits. Through having to define their projects—the problem, the audience, and potential design solutions—students engaged in a complex problem-solving process that they came to own. They could not simply plug in the research writing process they already knew well but instead had to figure out together how to learn about their problem and design a solution. Being on a team made up of students with a mix of skills and experience meant practicing ways to navigate and use those differences to their benefit. (One student remarked in her mid-term reflection that she had never done a group project that required so much attention to group processes.) Producing prototypes, getting feedback, and then tweaking their designs immersed students in the messy process of conveying ideas to others, whether through

---

5 Since I did not apply for IRB approval to formally study this class, I’m including here only the kinds of observations any teacher makes about the challenges and benefits of a new assignment. I plan to conduct a formal study of design thinking assignments in the future.
design or writing. Because they were expected to produce many ideas but could develop only one, students learned not to invest too early and to be open to differing points of view. (At least one group gave up its favorite prototype—a video—after the class preferred another option; they get credit for learning from all the prototypes and for being able to explain their final choice.) And inviting students to represent their ideas through sketches, storyboards, flow charts, and video seemed to help them see their ideas in new ways. Having set aside some part of most class periods during the project for group time, I was able to engage with students while they worked and was gratified to see the level of energy they invested. One colleague who regularly passed by the glass-fronted lab where I taught noted that students seemed reluctant to leave when class was over.

A legitimate question to ask, however, is to what extent a focus on design thinking improves students’ capacity as writers. My class was, after all, not a class in learning how to write, and the learning benefits I observed were not based on an assessment of students’ writing. Admittedly, in deciding to replace the research paper assignment with a design thinking project, I struggled with whether to require that the intervention they designed be a form of writing. In the end, I concluded that if I was serious about encouraging design thinking, students must be free to choose the mode of communication they believed would best address the problem for their intended audience. Giving students that freedom arguably deprives writing of its position as the privileged mode of academic expression. This questioning of the privileged place of academic writing is the real challenge that multimodal composing poses for writing classes, teachers, and professional organizations like the CWPA. Of course, in their final project reports, students used writing to explain why they decided a cell phone app was (ironically) the best way to intervene in cell phone addiction. Through writing (but also through talking, drawing, composing with digital tools, user testing and presenting) students worked together to use available language resources to make something new. If my goal as a teacher is to help prepare students to participate in a future of writing, this outcome seems just as important, perhaps more important, than learning to find reliable sources, shape a text for an audience, and marshal adequate evidence to support claims, which my students also learned.

7. Risky business

One of the greatest challenges we face in making writing classes a space for design thinking is that for design thinking to thrive, it must take place in a culture that supports it. Brown (2009) explicitly argued that what design thinking needs most “is an environment, in which people know they can experiment, take risks, and explore the full range of their faculties” (p. 32). Though many writing teachers work to create such an environment for their students, few of us would characterize academic institutions as places where risk-taking, experimentation, and failure are embraced. In her argument for a practice-oriented study of design, Kimbell (2012) concluded that design thinking may not transfer so easily from design schools where “challenging established categories is institutionally rewarded” to more business-oriented settings that may not welcome such challenges (p. 143). Critics of higher education would likely put most educational institutions in the latter group. In “Design Thinking and Higher Education,” Steven Bell (2010) considered how design thinking might help colleges and universities address their own “wicked problems,” citing the example of the limited impact of student evaluations on teaching. As Bell observed:

in higher education students endlessly evaluate courses, but what’s lacking is a committed effort to observe students as they learn and to then listen to their concerns. In a design thinking culture, faculty and administrators would empathetically put themselves in the place of the students at their own institution and elsewhere to fully understand how to improve what happens in and beyond the classroom. (para. 21)

What if we did the same for writing students?

Most of us are already deeply immersed in the wicked problem of how to teach writing. What I am I proposing is that we redefine the problem by asking not how we should teach writing, but how we might facilitate students’ engagement with writing in ways that lead them to see its value for their future. For The New London Group (1996), a turn to Design “emphasizes the productive and innovative potential of language as a meaning-making system” (p. 79). I’d like to offer design thinking, especially the elements I’ve explored above, as another way to bring innovative meaning-making into our classes. Brown (2009) argued that design thinking has the power to keep organizations “flexible, nimble, relevant, and responsive” but only if we embrace innovation, even at the risk of failure. In Brown’s words, “a successful prototype is not one that works flawlessly; it is one that teaches us something—about our objectives, our process, and ourselves” (p. 105). So let the prototyping of design thinking in writing classes begin
Carrie S. Leverenz is Associate Professor of English and Director of the Institute for Critical and Creative Expression (ICCE) at Texas Christian University, where she teaches undergraduate and graduate courses in writing, editing, cyberliteracy, and women’s rhetorics. Her work has appeared in *Computers and Composition, WPA, JAC,* and numerous collections, and she has coedited, with Amy Goodburn and Donna LeCourt, *Rewriting Success in Rhetoric and Composition Careers.* Her current research interests include the intersection of writing program administration and multimodal composing, the future of doctoral training in rhetoric and composition, and the practice of writing about teaching.

**References**


Archibald, Bruce. (2005). The three r’s. In Bruce Archibald, Ken Baynes, & Phil Roberts (Eds.), A framework for design and design education (pp. 8–15). Warwickshire: The Design and Technology Association (DATA).


