

Rethinking Process through Design

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Whether in first-year seminars, in general education plans, in writing classes, or in writing across the curriculum programs, the combination of design process work in writing studies has valuable potential. In the particular context of writing studies, design process work can add new life to conversations about writing process. While there are as many design processes as writing processes, the design process here is understood in general as a problem-solving approach, as clarifying an existing issue early, having many iterations or versions of a product (or text), being critical of ideas as they arise, and obtaining consumer (or reader) feedback throughout as a form of testing the product. Objects from an iPod to a classroom desk go through such a problem-solving process. The designers consider a consumer's or audience's interests (a comfortable seat with room to work that takes up minimal space), address many concrete issues (from cost to lumbar support), and try out many versions with critique (sitting in this hurts my legs) before establishing a final product. This design-based approach moves the traditional writing process categories away from idea generation, drafting, and revision, even when those are understood to work recursively, and encourages the writer to create in a more social environment; writing becomes an act of collaboration with readers and materials. The design-based process leads to

earlier criticism of ideas, trying out more ideas, and a greater variety of feedback than most writing processes.

Work in writing process has remained rather stuck on the process versus post-process split, with most writing textbooks including a fairly standardized and general notion of process. The process and post-process movements have been discussed by many others (see Murray, Elbow, Emig, Faigley, Hairston, Tobin, Bizzell, and Olson for examples). A design process, on the other hand, highlights situated writing, public audiences at different points in the process, the ultimate use or goal of the writing, and the focus on materials and forces shaping the writing and the process itself. Some research has intentionally moved outside of the process vs. post-process debate. In the collection *Beyond Postprocess*, editors Sidney I. Dobrin, J. A. Rice, and Michael Vastola seek to answer key questions about post-process and its entrance into writing studies, questions concerning “new-media writing technologies and its concomitant epistemologies,” questions of institution and how history affects writing, and “questions of pedagogy and its consequences for intellectual work” (6). Design work, an alternate post-process approach, not only gives a way to view process issues anew, but it also, unlike more traditional processes, emphasizes considerations of both writers and the forces around them, and these considerations make the writing process much more specific to each individual writer. Further, the design process emphasizes idea generation and critique in a specific context in such a way that it is really a broader rhetorical process that includes significant writing elements, and thus contextualizes the writing that students or others might do. Writing studies and writing classes are a site where some of that design thinking and liberal arts context can begin working together

more, with concrete problems (say a local environmental issue) driving assignments that can use a design process and contextualize that work with scientific or historical information.

Writing and design both require imagining what is possible in a particular context. Design theorist Ezio Manzini defines design by stating, “Conceiving the possible is the basis of every design activity. The thinkable/possible is based on an integration of the capacity to imagine [. . .] with an historic component: the development of a technical means available at a given moment, systems of depiction and the references of significance with which they connect at a given moment and in a given cultural setting” (48). Manzini’s approach emphasizes problem-solving creativity and the use of available means, which starts to sound awfully similar to an Aristotelian notion of rhetoric. That work to conceive the possible goes through specific steps for most designers and design-oriented organizations. These steps often work to discover the possible answers with the technical, material, and social means to find feasible versions of those answers. The move, ultimately, is away from a process of writing or about writing toward a *rhetorical design process* of discovering creative possibilities and determining how to best implement them. This rhetorical design process builds in writing all along the way, contextualizing the purpose of many common forms of academic writing.

The version of design Manzini discusses is not that different from rhetoric, but simply focuses more on objects than on language in finding interventions in public life. At the same time, the processes going on here can provide alternatives to traditional thinking about process in writing studies. Design thinking is a growing part of composition studies, as James Purdy’s 2014 article, “What Can Design Thinking Offer Writing Studies?” enumerates. He argues that “design

thinking offers a useful approach for tackling ‘wicked’ multimodal/multimedia composing tasks, an approach that asks us to reconsider writing’s home in the university” (614). Our essay follows on Purdy’s work to lay ground for design thinking, seeks to expand it beyond multimodal/multimedia work, and turns the question of design toward the notion of process in writing studies. It argues that design thinking and processes promote experimentation and innovation with writing too. Using design approaches to process for writing can reinvigorate work on process and be applied throughout liberal arts education.

To encourage the connection between design and writing, we examine where process work connects to design thinking already. We then bring in research from the field of design to show important, applicable process elements. Finally, we offer a larger exploration of how using design processes in writing classrooms could function. In particular, the role of research, the approach to thinking with audiences, and the notion of materials stand out as key elements for the design writing process described. Ultimately, these three main considerations suggest possibilities for composition studies as a linchpin for design approaches to the humanities. The goal is to offer an approach to process for writing studies that is inherently interdisciplinary and where writing emerges as a valuable tool in a larger problem-solving process. Writing studies can be a place to bring the pragmatics of working on problems in the world together with the vital context, value, creativity, and power issues the liberal arts tend to consider.

From Writing Process to Design Process

Design processes take the mingling of social processes and materials seriously, extending other post-process research. Byron Hawk rethinks Thomas Kent's earlier imagining of post-process writing as "public to interpretive to situated" (1) by reversing these steps to further emphasize the deeply social nature of writing. Hawk explains, "Bodies occupy material situations that are in constant motion, interpret those flows through bodily knowledge and expression as much as language, and contribute to those assemblages by participating in their public gathering" (77). The concrete materials of pen, computer, and databases students know how to use, for example, are at the beginning of a writing assignment process. Material elements like carpal tunnel syndrome or the bodily knowledge that comes with a powerful emotional experience are central to writing too.

As with writing situations that are enmeshed within public spaces, *Beyond Postprocess* examines writing in digital spaces: Kyle Jensen, for example, explores online writing archives to "expose the complexities of individual and collective acts of writing" (133). We offer design studies as an intervention in these discussions of process. In one sense, this is in keeping with the spirit of works like *Beyond Postprocess*, particularly in considering issues around materials and text production, but there is a stronger element of staying with the importance of providing and defining processes to work with. Put another way, design processes already emphasize innovation with materials and consideration of physical and digital environments, and there is value in considering how to help students experiment with these process ideas. For example, we might have students list materials they use to write with, like pencils, phones, and laptops, along

with writing reflections on people who have influenced their thinking. These can then be explored (with researched texts, too) as parts of a writing design process that considers the value and limitations of different materials.

In design process, students are encouraged to view outside sources as not only texts but as *materials*, considering the physical nature of texts and how their surrounding environments affect the text produced. While many of the works in *Beyond Postprocess* consider the literal, physical effects of the material, physical world onto texts, our study also sees these physical components coming into play in a metaphorical way. Encouraging students to understand and identify the physicality of text can branch off into understanding outside sources as something malleable and shiftable, something like building blocks. Research, here, becomes more of a building process than an arbitrary activity in collecting three or seven sources as advised by the instructor. In this rethinking of research as material collection, students, instead of regurgitating, summarizing, and relying on what others have already said, are encouraged to take these building blocks, the outside sources, and use them to build an idea that is *steadier* than what has already been said. Our students can take design literally, even putting sources in spatial relationships on a desk or computer desktop to look for empty spaces or weak connections that could use their own research. We have even tried taking various parts of a building (foundation, plumbing, electrical, windows, façade, or others) and had students metaphorically align sources, parts of their arguments, and other materials with different parts of the building. Students are encouraged to find ruptures, cracks, and holes in seemingly unsteady structures, or already extant work, and it becomes their responsibility to fill in those empty spaces with new research and new ideas. For

example, our students may be explicitly asked not to argue for their viewpoint on an issue, from gun control to a proposed new building on campus. Instead, they should first take sources, begin where work has already been done, and look for what those sources are already accomplishing, similar to the process of looking toward already extant products or physical creations that give users a positive, productive experience. The student can then take into account the qualities of the material, considering its malleability or tensile strength as if it were a metal. Student intervention happens later in the process and is done with the idea of adding a new material for use that can complement the properties of what exists.

A few post-process theorists already bring elements of the design process into their discussions of the writing process. Barbara Couture alludes to the integration of design process within the writing process; however, this allusion is quite brief. For Couture, the problem is that writing instructors have been “teaching students to model technique rather than to emulate expression” (30). Design process still has techniques to use, although perhaps in less rigid ways, and the techniques are frequently about understanding design problems or rhetorical situations as well as possible. Design provides Couture with a way of thinking about the agent. She values the design process as it connects to developing a person, not as steps for writing. More broadly, James Purdy explores the possibilities for writing pedagogy coming out of design with his useful framing of design thinking in writing studies. He shows both how much design has been a touchpoint and how little it has been addressed in depth. Richard Marback has also written as directly as anyone about design in composition, calling for the value of using “wicked problems”

with no easy answer and serious constraints to shape writing and media projects, which could be treated as design situations as much as writing situations.

For Purdy, the fourth of his five categories for how design has been used thus far in writing studies explicitly discusses process with design. In the attempt “to draw attention to the material conditions of composing,” writing scholars “use design to make visible how processes and products of writing are inherently physical, embodied, and ideological, sometimes considering ways in which they are (or can be) aesthetically pleasing” (618). Our own look at design processes continues the focus on material and aesthetic aspects of writing, but more directly argues for the value of implementing elements of design processes in pedagogical settings. Purdy ultimately declares that, “In focusing on action, design thinking reminds us and our audiences that writing *does* something. And we must approach it, teach it, and research it with the care that this awareness requires” (634). A writing process, design process, or rhetorical process should keep this end of action in mind, and the process should regularly remind the writer or writers of that end. Here, the emulation Couture asks for is of a process, not an expression. When working with our classes on the design process described later, we ask the students to follow the specific process more than when using traditional writing processes, and emphasize writing as doing more than saying.

Purdy’s desire for action echoes Gunther Kress’ assertions that design processes finish with creation. Analysis, critique, and summary are all tasks on the way to making something new (86-87). The idea of analysis as a step on the way to creation already suggests ways that traditional and valuable writing activities, like analytical work, could be integrated into larger

processes with a potentially greater sense of purpose for some of that analytical work. Providing even more detail about design and process, Charles Kostelnick treats design as a visual counterpart to the verbal work of writing and finds “affinities” between design and writing processes (267-69), particularly with both as “acts of discovery” (278). Kostelnick calls for a more varied and flexible approach to process and shows that the connection between shaping or improving process and shaping or improving product is not as direct as might be easily assumed (278).

That flexibility can be found in a design process Purdy briefly examines. He uses Stanford’s d.school as the model. The version Purdy looks at has six steps: to “understand, observe, define, ideate, prototype, and test” (627). Purdy partially parallels this with writing processes, with the “observe” stage as the most difficult to translate. The goal seems more to provide parallels for familiarity at this point, rather than to show contrasts for new possibilities. We argue that these comparisons are not as close as he allows since prototyping different versions quickly is not much like most students’ rough drafts. Ideating can mean spending much more time with invention than most brainstorming activities, and testing is more active than lots of revision work (see Purdy 628-29). He does appreciate some key differences on the ideate step, with design focusing on quantity and not getting locked into one idea more than brainstorming or freewriting might tend to (629). Instead of narrowing from a broad topic, we work to define a narrow problem. Then an expansion has to happen. It can be seen as a two-stage brainstorming process, first to develop the problem to address, then to develop and critique a variety of solutions. This process element can be seen in the next section, where we further earlier work in

writing and design by exploring processes from design studies and begin providing suggestions for how those processes can be implemented in writing studies.

Design Processes

One of the main reasons to consider design processes is that they are set up to address specific problems for specific audiences. There is a regular mechanism for feedback, and revision is (as with the old voting cliché) early and often. They also can have a strong prescriptive element. This willingness to say what concrete steps to take to create a better object or write a better paper goes beyond some of the general categories of drafting, revision, publishing, and others in many composition texts. The aesthetic element also allows for a push for common composition items like the rhetorical appeals of ethos, logos, and pathos to be understood less as categories to identify and more as appeals—things that should entice a reader or be pleasing to an audience in some way.

Many design processes take a user-centered approach that works closely with clients and potential users to glean their experience with the product. Major design firms like AECOM, Jacobs, and Gensler use client-led processes in order to fully understand the needs, goals, and limitations of both their clients and their client's future consumers. Dana Chisnell, co-author of *Handbook of Usability Testing*, deems a product's user its co-designer: "Your users are continuously redesigning your user interface in real time. Users become your co-designers because you can't imagine all the ways someone will actually use what you create" (qtd. by Pratt and Nunes, 18-19). In composition classrooms, instructors encourage students to make sure their work is "usable" or readable by conducting peer reviews. A common practice during peer review

is to have partners paraphrase one another's thesis statements to ensure that the writer's main message is coming across and to glean any new meanings or interpretations the partner might be picking up that the writer did not intend. If the writer's thesis statement has been misinterpreted or if the partner finds some way to narrow or make the thesis statement more unique, the student is then expected to go back and revise their thesis statement with the reader's ideas in mind. In this way, the writer is making their paper more "usable" for its intended audience.

Thomas Lockwood, in *Design Thinking*, identifies the title term "as applying a designer's sensibility and methods to problem solving, no matter what the problem is" (xi). He goes on to give key elements as a partial process. Those elements include first, "a deep understanding of the consumer based on fieldwork research," second, "collaboration, both with the users and through forming multidisciplinary teams," and third, to "accelerate learning through visualization, hands-on experimentalism, and creating quick prototypes" for feedback (xi). The goal is experimentation and major changes or revisions at early stages. Finally, in this planning process, he adds "visualization of concepts" and sometimes "business analysis," (xii) which for our purposes could be a sort of feasibility analysis. Early research, input from a variety of people, and actually creating multiple models or ideas to consider are themes from Lockwood that appear in many design processes. All three of these tend to contrast with approaches to writing processes (or post-processes), which focus on the individual writer, whether power structures or influences are a main focus or not, and how they impact that writer's work. Creating multiple, different models is rare. The goal of most writing processes, particularly in textbooks, is to have students and other writers revise their initial work, but not so much to create several initial

options to consider, critique, and combine. This early critique is important, as is early research. Making research an early part of writing processes is much more common than the other two items perhaps, but usually not explicitly in writing instructions. More to the point, it is not built-in enough to encourage students to do it. A thesis and arguing that point are so central in many cases that students who save research until later are often just reflecting the priorities they see.

The design firm Cooper claims a “human-centered visual design process,” that is less about a sequence of steps and more about using “key practices” (Mandel). The three key practices they identify are “Understand the Context,” “Explore and Evaluate,” and “Iterate Rapidly.” These may be broad, but the focus on context is another reminder that this is a rhetorical process where knowledge from history to personal politics is important. Exploring and evaluating holds off on creating models until research is done and critique has already happened. Finally, rapid iteration again involves redoing models or introductions quickly to develop options and not get stuck in an initial idea.

We can return to Stanford’s d.school (part of the Hasso Plattner Institute of Design) here as well, with “empathize, define, ideate, prototype, test” (“An Introduction to Design Thinking” 2-6) as their five current modes to work in recursively. To empathize is a way of thinking about audience differently, considering others as a group to feel with rather than to act upon. To define means that a problem is out there or others have a problem. Defining it is working out the details—perhaps really working to understand the assignment sheet in whatever form it takes. Flower and Hayes are relevant here again in their discussions of different types of questions writers pose to define problems differently (27-30). To ideate maps roughly onto brainstorming,

but with approaches to a problem as the focus rather than topic generation as is often the case. Ideation can involve a questioning process to refine those ideas too, already being collaborative perhaps. Prototyping matches with drafting but in different versions or approaches before a main option is chosen. Those prototypes are tested, which fits roughly with revision in contemporary writing process models. Actually submitting a product comes after all those.

While design processes can be linked to work on writing processes, simultaneously exploring them on their own terms is useful for highlighting new possibilities. Karl Aspelund's textbook *The Design Process* (2010) breaks process into seven steps: "inspiration," "identification," "conceptualization," "exploration/refinement," "definition/modeling," "communication," and "production" and explains that the steps are "not necessarily linear" (1). Aspelund approaches the design process by starting with large, almost unlikely ideas (he gives the example of a model wearing clothes on a runway that would be impractical to wear in public) and invoking "inspiration" in the designer with a series of prompts similar to those writing instructors would give their students for free-writes: "What have you seen, read, or heard that made you understand something in a way you have not or could not before?" "What can make your perception clearer?" "What, where, who could be your muse?" (28). Then, Aspelund advises students to begin trimming down lofty ideas by "identifying" a thesis and the project's main constraints such as environmental and material limitations, problems of marketing, and time constraints for the designer. He suggests leaving the issue of problem-solving until the fourth step—"exploration and refinement"—and maintains that thinking too much about problem-solving in the early stages of the design process can impinge upon the designer's

creativity. In “Exploration and Refinement,” the designer begins to explore solutions and eliminate details that no longer seem feasible. The final step, “Definition and Modeling,” involves determination of functionality, reliability, usability, and proficiency (120). Aspelund resists constraints early on, even intentionally, and then brings them in more and more as the process goes on. The delay in addressing problem-solving elements allows the designer to identify lots of constraints before working on ways to handle those limitations. The initial prompting questions serve as the large-scale problems or concerns to address.

Stephen Pentak and David A. Lauer take a different approach to the design process in their book *Design Basics*, suggesting “three very simple activities”: “Thinking,” “Looking,” and “Doing” (7). Like *The Design Process*, Pentak and Lauer explain that these steps are “not sequential and certainly are not independent procedures” (7). However, unlike *The Design Process*, Pentak and Lauer’s process begins with, rather than delays, the focus on problem solving. In “Thinking,” the first step, students are encouraged to identify an issue their creation will seek to remedy and are provided with a series of questions that help to further define and narrow that issue. “Looking” involves gaining inspiration and form ideas from “both the natural world and human artifacts” (15); this step, called “generative design,” has students look at the materials that surround them and discover a way to use those materials in their creation ideas. Looking also involves understanding the creations that have come before the student’s own, or studying the history that has led up to the new creation. Pentak and Lauer explain, “For better or worse we do not create our design solutions in an information vacuum” (18). They encourage students to understand the influence of “commercial and societal forces” when looking at and

creating art (19). Lastly, “Doing” involves “thinking with materials.” More specifically, the chapter defines this step as “Trial and error, intuition, or deliberate application of a system [...] set into motion” (20). The looking stage is where the importance of finding surprising materials, knowing historical contexts, and other forms of research come in. This generative use of research potentially brings in many fields of study and emphasizes applying or otherwise using knowledge, rather than just having it.

Designing Writing

One of the advantages of using design is how it mixes the functional and the aesthetic. Writing classes typically spend the bulk of their time on writing to get things done in the world—a fairly traditional notion of rhetoric. Design is consistently about functionality. The handle of the mug has to fit hands well; the material has to deal with hot liquids without falling apart; the lip of the mug should let the drink flow out smoothly. At the same time, the elegance or beauty of the object is a constant concern in design. Keeping the functional and aesthetic both part of the process for composition can be a way to promote writing quality in different spheres and to maintain a sense of creativity that is vital for crafting high-level work. We keep both the functional and aesthetic in mind as the categories offered here serve as a possible design process to adapt and use for writing classes or classes with major, process-oriented writing projects.

Working from the different design processes explored above, we have developed a tentative set of design modes to work in for writing studies. These are offered as prototypes and are highly revisable, but they offer a space to explore in more detail what using design process

elements might look like in writing studies. The elements are as follows: 1. *define a problem*, 2. *quick research and material collection*, 3. *ideate*, 4. *empathize*, and 5. *prototype your story*. In this process, collecting feedback from various constituents happens in nearly every step along the way, and is thus integrated throughout. Publication with critique and reflection would complete the process. As with many processes, the order is somewhat sequential, but involves jumping back and forth some and even changing the order for different problems. In what follows, we sketch them out, with particular attention to the earlier stages of the process. The materials, ideation, and prototyping elements are particularly important for promoting experimentation and innovation in writing and thinking.

Define a problem: The first step in a design process adapted for writing studies is to identify the problem or problems. A specific version of the main problem, with an analysis of the sub-topics within it, is ideal. This is not entirely unlike what Linda Flower and John Hayes argued when looking at the mid-level kinds of questions good writers pose. Jenny Rice, whose examples include campus architecture, discusses using students' "status as para-experts to pose a problem" (136). These para-experts have experiential knowledge of something but are not disciplinary experts. Her approach led to a fairly direct problem-question and then required finding experts and "connecting these experts through the problem that they posed through their own para-expertise" (137). That connecting work is already moving on in a process, but the key here is setting a problem that crosses disciplinary lines and shows students that their job often involves finding resources to bring together in writing about a problem.

In determining or working with a problem, perhaps about how to expand student recycling on campus, students would ideally write an analysis of the problem's different components. Writing activities are built in to the larger design process. Already drafting has begun, and altered parts of this analysis might appear in a final version of a paper. In the campus recycling case, writing at this stage included summarizing what recycling already took place, sketching descriptions of different constituencies, and reflecting on possible limiting factors to recycling thus far. In *Designerly Ways of Knowing*, Nigel Cross explains that designers are "characterized by their treating the given problems *as though* they were ill-defined problems, for example by changing the goals and constraints, even when they could have been treated as well-defined problems" (78). This stage involves working through a problem to make it one's own and adding complicating factors or revising the problem itself. Writing becomes a tool that is vital in this process.

Quick Research and Material Collection: Most students are not already going to be experts on the problems their papers are dealing with. The design element of quick, immersive research into a topic, trying to create a small level of expertise is vital. Creating this expertise would happen through Internet, text, and interview research done in a short period of time. Finding and talking to relevant experts (or getting their written advice) from different fields sets the stage for working on understanding and synthesizing sources. This research work would likely be the main homework for a class session or two, with students expected to create notes sheets or even highly annotated source sheets for this stage. The goal is more to understand as many factors and

as much background about an issue as possible, more than to extract specific sources to quote from, although these sources could be returned to later for quotations. In a previous election year, one of us (Newcomb) had students do this sort of quick research to become mini-experts on one policy issue each. Much of the point is to push research practices earlier in the design process and to show that research as both a writing activity and a basis for later writing. This quick research can help re-define the problem as well.

Collecting materials follows as part of quick research, but is less about background understanding and more about finding things to work with. The overall point is to create a level of expertise on a topic. The materials serve as a central aspect of this design approach. Geoffrey Sirc writes of a box assignment based on Marcel Duchamp as a way to help students do “composition, a compelling medium and genre with which to re-arrange textual materials—both original and appropriated—in order to have those materials speak the student’s own voice and concerns” (113). This is what rhetoric as design does. It works with materials in the world and puts them to temporary and partially new uses to create an experience for others. These materials may not even all be textual at this stage, but serve as different parts of addressing the problem at hand. Sirc goes on to call the writer a “collector” (117), which we take further to the idea of a curator. The writer collects materials in a thoughtful process that will involve cutting and selecting the best items to arrange.

Materials are central for almost any work in design studies. A designer has to have a grasp on the possibilities and limitations of a particular metal, wood, software, ink, or whatever else may be relevant. Working with and not against the materials is one way of thinking about

the application of this knowledge. Designer Rosanne Somerson focuses on how one relates to materials and “how sensitized responses to materials can allow the material, rather than the maker, to lead” (2013: 25). Starting with the materials and getting to know them and their possibilities, whether images, texts, models, plans, statistics, or other things gives the writer something to work with, rather than having to feel the pressure of creating ideas out of thin air as some brainstorming activities seem to ask. Laura Micciche has already explored writing tools and technologies in thinking about what one physically writes with. She also considers personal and individual influences through acknowledgments pages (496-97). These materials are items to gather at this stage of a design process, but materials work in a collected or curatorial way for Micciche too (494). We understand this curating process as a key part of a larger design process that makes up writing. Certainly the emphasis on materials for Micciche and Somerson (and others like Preston and Johnson-Eilola) puts some of the agency in the hands of other people and in the materials themselves, and this aspect of writing emphasizes selection and eventual arrangement.

In a recent Composition section, Leshowitz encouraged students to start collecting materials for their projects early and told the class that they needed to gain a strong handle on their topics before they begin the drafting process. To encourage early research, X created a material collection packet for students with labeled sections for the types of materials they should be finding (personal anecdotes, personal interviews, definitions/explanations of key concepts, journal articles, opposing views) and lines beneath each entry to discuss what information is presented to them in each source and why this information might be useful for

their project. At the top of the packet, Leshowitz included a space for students to write their research question or issue they seek to remedy. She told the class to think of the research packet as a messier, less formal annotated bibliography where they can simply find relevant facts that they may or may not use, and meditate on why these materials are important for their projects. This led to stronger, more purposeful integration of research materials.

Ideate: With the available materials and problem, ideation is a next step. In other words, what approach should the document take and what will it actually look like and say? This step would often be done both individually and in collaboration with others. Research here would involve directly exploring how others had dealt with similar problems before. The goal is to create as many ideas as possible, but critique is needed too. Matthew Syed, who studies innovation, argues that what is typical for major innovations is early collaboration and feedback, voicing new ideas and engaging in group criticism of those ideas to show more aspects of a problem. This works in contrast to strictly free or open brainstorming that may ignore constraints, seeing them as problems rather than spurs to new ideas or changes. Similarly, Cross relates a study that compared designers favorably to scientists because designers “generated more possible solutions to a problem and then eliminated possibilities, finding an effective answer, rather than giving a more systematic analysis of the whole to try to find an ideal answer” (6). Either version sounds better than just giving the first or second answer that comes to mind, but the idea is to develop lots of possibilities and critique them, rather than analyzing a situation until the one right answer comes up—or fails to arise.

In this stage, then, the individual and group should not just let ideas flow freely or reject them, but should work to identify possible problems and points of difficulty with each idea. This key step of problem identification allows ideas to be refined and developed more fully, with a goal of keeping solutions realistic and practical. In a class, this can mean group activities at a much earlier stage than something like a rough draft workshop. Students would work together to help each other come up with ideas, and then would need to find possible problems with different ideas.

In one set of classes, Leshowitz reconfigured the ideation stage into a proposal argument exercise. After a brief lesson on proposal arguments, students used a proposal template and placed their current thesis statements within it, allowing them to approach their ideas from a more practical, action-oriented angle. Within the ideation stage, students conducted further research on what had already been done to remedy their selected issues. They were advised to think of ways those already-in-place programs could be altered for better results. The students proceeded to write three possible solutions to their chosen issue and craft specific programs to remedy the issue. For example, one student wrote about implementing writing and journaling workshops into K-12 schools to limit and prevent bullying. The student had to consider finances, who, specifically, could qualify for these workshops, and who would instruct and monitor them. The final step of the activity was to pass their work to a partner who proceeded to look at the proposed solutions or details of the proposed program and create a list of corresponding setbacks and limitations. The students received their setbacks and were advised to rethink and revise their proposals.

Empathize: The empathy step, too, can be present throughout the entirety of the process, but fits after many ideas are developed and before a text is fully written. It is an approach to audience that makes connection with the audience more important than changing them. Rhetoric and writing studies has a long history of considering audiences in different ways, including relatively modern approaches like invitational rhetoric and Rogerian argument that want to focus on the relationship with the audience. Empathy is an adjustment to that audience focus with the goal of helping students identify with the reader more, instead of talking to an overly generalized, ill-defined reader out there somewhere in the abyss. To create a clearer, more realistic audience, empathy-encouraging activities such as role-playing or writing from the audience's point of view would be important in this stage, and again would be part of the collection of written documents developed around a project like this. The goal is to change the attitude of the designer or writer as much as it is to understand the audience. When possible, talking to actual audience members can help develop that empathy. In an assignment that intentionally asked students to write about controversial topics, Newcomb had some students look for personal stories of people opposing their own arguments with the question of why that other person might think so differently from you the writer. This is hard to find for some topics, but the activity worked to personalize audiences in some cases. Written descriptions of possible audiences or stakeholders and where they are coming from in terms of need and belief would result from this part of the process.

Prototype Your Story: At this point, a student would theoretically have spent a great deal of time mulling over the project and various ideas about how to respond to the problem at hand.

Specifically identifying the story the designer or writer wants to tell is a next step that keeps a paper connected to readers and refines or limits the content. Identifying the story involves determining what sort of frame to put around a text, what angle to take, and what types of examples might work best. This approach treats arguments as a form of narrative, which they are in the sense that someone finds a problem in the world and goes out to do work to overcome that problem, with examples and incidents along the way. Fashion designers, for example, describe the person they are designing for as a means of demonstrating their understanding of their “audience’s,” or model’s, needs—their design becomes the chosen form for their “solution.” Next, students could provide some initial drafting or perhaps outlining or even storyboards of the shape their papers will take. The notion of story, here, ties writing to problem-solving processes of all sorts.

Once a main story is identified and any feedback at that stage is digested, students can finally start seriously drafting versions or portions of their assignments. Prototypes imply quick drafts to try out, and we have had students rapidly write two or three different versions of the introduction to a paper. They can then return to those and choose the best one or take elements of more than one. This kind of prototyping work can be done with different portions of a paper, and is a way to create different ways of presenting a message. Having multiple versions of parts of a paper shifts revision into the process earlier, rather than making it an after-the-fact event that may or may not happen. So much preparation has gone into the assignment that now it mostly just needs to be written. Feedback can certainly be part of this stage, with others looking at prototypes or reading different versions and just picking the stronger portions. This prototyping

step may also call on material written in other stages, excerpting and assembling it here.

Ultimately, the prototyping stage develops the drafted material to do a final arranging and reshaping on for publication.

Conclusions

This larger design-based writing process, like almost any process, is recursive, and one can and will return to earlier stages at times, but it gives a path of development to follow. It may be an involved path, perhaps not allowing for as many final papers in a composition class, but the writing at many steps is significant enough to potentially increase the writing practice done in a semester. Compared to the traditional process model of prewriting, drafting, and revising, the design process is more concrete. With design process, our students are starting with a call to action, bringing a much greater purpose to their papers. And that's where the issue lies with using a more traditional process when research writing; too often, students are simply reporting on information they found, on what others have argued, and maybe sharing their opinions on the topic.

With the design process, students were required to become involved with their topics, to imagine that they are working with the communities they are writing about and considering what would work best for them, similar to what designers do when they are working with clients. Lastly, the design process turned out to be a much more hands-on experience for the instructor. In each step, the instructor collected and was able to monitor student progress with their topics and their research beyond usual assignments, like the annotated bibliography. Constant feedback

further narrowed their topics. With design, not only were students receiving constant feedback from the instructor but from their peers as well. Overall, working with the design process served to be a much more proactive and involved method of approaching research writing.

Using a design-based writing process like the one above can re-shape a composition class into one where the activities are problem solving centered, but the writing is still at the foreground. It pushes students to do research at multiple stages and in multiple ways, not just to provide support after the fact or as part of a traditional research paper. It can also approach the difficult topic of revision differently, openly making revision of ideas and plans a major activity in the early and middle stages of a writing process. Beyond the results for students, design processes here further the conversation about connections between design studies and composition, taking advantage of design thinking and building more bridges between disciplines. The further goal is that continued work on process will spur more experimentation and innovation with approaches to writing process, even slowly seeping into composition textbooks. While the examples in this essay are from first-year writing classes, and design process elements can work well there, the ideal places to consider this might be elsewhere. First-year seminar courses that work on projects and bring different fields together or more advanced writing courses would be just as good locations for thinking about design processes for writing.

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