

# Collaborative Approaches to the Digital in English Studies

<b>CHAPTER</b>	10
<b>TITLE</b>	Tinker-Centric Pedagogy in Literature and Language Classrooms
<b>AUTHORS</b>	Jentery Sayers
<b>OVERVIEW</b>	<p>In this chapter, the author argues that—as digital media become all the more common in today’s reading, writing, editing, and researching practices—tinkering is of tremendous value to both graduate and undergraduate students in literature and language classrooms. Its value emerges not only because digital media are easier than their analog predecessors to circulate and modify but also from the fact that competencies in collaboration are fundamental to that circulation and modification. Embracing tinkering’s inexpert, tactical, and situational experimentation, the author argues, lends itself well to introducing students of literature and language to otherwise unfamiliar modes of learning.</p>
<b>TAGS</b>	code, collaboration, collaborative, digital, English, experimentation, humanities, language, learning, literature, media, pedagogy, students, tinkering, writing
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## Tinker-Centric Pedagogy in Literature and Language Classrooms

### Jentery Sayers

Think “tinkering” and childlike behaviors likely come to mind. For instance, in *Aesthetic Theory* (1970), Theodor Adorno calls tinkering “infantile” (p. 37). The word implies play, not to mention a lack of expertise, technique, or formal training. Plus, learning climates that foster tinkering (such as the [Tinkering School](#) in Montara, California) are often intended for youth. Tinkering also entails toying with objects that already exist, not designing or building them from scratch. The stakes of tinkering thus seem small and the consequences insubstantial. Meanwhile, like bricolage, tinkering is highly situational and context dependent, presumably without thesis or formula. It is tactical. And for those who study literature and language, it may appear irrelevant. After all, literary criticism and critical theory are usually quite conceptual in character. Even when texts are treated more like physical objects for hands-on engagement (e.g., during archival research or in textual studies), that engagement must be incredibly careful and methodical, especially if rare books, incunabula, or other such artifacts are involved. Indeed, the archive is no place for childlike behaviors. Nonetheless, in the following pages I argue that—as digital media become all the more common in today’s reading, writing, editing, and researching practices—tinkering is of tremendous value to both graduate and undergraduate students in literature and language classrooms. Its value emerges not only because digital media are easier than their analog predecessors to circulate and modify but also from the fact that competencies in collaboration are fundamental to that circulation and modification. Since neither collaboration nor digital media is exactly ubiquitous in English studies, embracing tinkering’s inexpert, tactical, and situational experimentation lends itself well to introducing students of literature and language to otherwise unfamiliar modes of learning.

Granted, some English studies courses do, in fact, integrate collaboration and digital media into the learning process. Consider coursework associated with fields like computers and writing or digital humanities, which both focus heavily on the collaborative use of new technologies for inquiry and scholarly communication. Still, formal opportunities for extensive study in these fields are not as common as one may think. Even a cursory review of directories, such as [centerNet](#)’s international network of digital humanities centers, reveals that most technology-focused humanities centers, initiatives, or programs do not issue degrees, especially at the undergraduate level. At the same time, the “lone scholar” remains a standard model for knowledge production in the humanities, particularly for graduate students. Christine Borgman (2009) observes:

While the digital humanities are increasingly collaborative, elsewhere in the humanities the image of the “lone scholar” spending months or years alone in dusty archives, followed years later by the completion of a dissertation or monograph, still obtains. Students often are discouraged from conducting dissertation research under a faculty grant. Instead, they are expected to spend yet more time identifying funding for solo research. When one is groomed to work alone and does so for the years required to complete the doctorate, collaborative practices do not come easily. (para. 47)

And yet, only one year after Borgman’s publication in *Digital Humanities Quarterly*, the president of the Modern Language Association, Sidonie Smith (2010), offered an [agenda for expanding what it means to write a dissertation in literatures and languages.](#) Two of the four ideas she provides for “new dissertations” resonate with the emphasis of this chapter. Smith’s first and second examples are as follows:

1. “Composing, displaying, and linking a *digital project* potentially valuable to other scholars, teachers, and students. As Kathleen Woodward suggests, such projects might be conceived under the rubric of curation rather than argumentation.” [italics added]
2. “Undertaking a *collaborative project* with other students or faculty advisers. Such projects might eventuate in a publishable essay, for example.” [italics added]

Of course, these two ideas could go hand-in-hand, but for now the point is that what Smith (or, by proxy, Woodward) proposes relates to other similar calls for change in the academy.

In 2002, the National Research Council released a report entitled *Preparing for the Revolution*. The findings of the report claim that “[i]nstitutional boundaries will be reshaped and possibly transformed” (p. 47), “[t]he future is becoming less predictable” (p. 47), and “the university will have to adapt itself to a radically changing world” (p. 48). Elsewhere, in “Envisioning a Transformed University,” Duderstadt, Wulf, and Zemsky (2005) describe a revolution that will “pose considerable challenges and drive profound transformations in existing organizations such as universities, national and corporate research laboratories, and funding agencies” (para. 10). As they go on to suggest, the revolution could already be “well under way . . . and simply not sensed or recognized yet by the body of the institutions within which the changes are occurring” (para. 29). What’s more, Kathlin Smith (2005) describes a “revolution in the making” and the transformation of scholarship on American literature. This revolution corresponds with a 2005 publication by Martha Brogan (written with Daphnée Rentfrow) that is based on a preliminary report prepared for The Andrew W. Mellon Foundation in 2004. In it, Brogan

states that there is a “dearth of specialists” (p. 30) who are prepared for what Eric Ayers refers to as “a revolution led from above” (qtd. in Brogan, 2004, p. 7) and what Brogan associates with the scholarly practices of “renegades” (p. 8). And though it is variously described by these and other contemporary publications, the revolution—as well as the transformation of scholarship and the renegade practices associated with it—can unfailingly be qualified by a single word: “digital.” Digital scholarship. Digital practices. The digital revolution.

But the revolution may not be all that revolutionary. Or, to return to a point made by Duderstadt, Wulf, and Zemsky (2005), it might not be sensed or recognized as such. There is no great rupture, *per se*, that can be time-stamped as the sole cause or origin of digital scholarship. There is no demonstrable gap between English studies then and English studies now. Instead, the so-called revolution might be better articulated as a gradual, iterative process through which “the digital” is incorporated into English studies and vice versa. And with that gradual incorporation, collaborative activity is slowly increasing across the academy, due in part to the growing popularity of crowdsourcing, microblogging (e.g., Twitter), and networked, multi-authored writing spaces like wikis, blogs, and Google Docs now available in the cloud. Sure, platforms such as these are exciting. They garner a certain allure, and English scholars should spend time testing and assessing them. That said, they do not need to be read deterministically, and revolutionary rhetoric tends to favor such determinism.

On the other hand, the collocation set—“slowly,” “gradual,” “iterative,” and “growing”—I have articulated thus far favors a tinkering mindset, whereby a dusty Humanities 1.0 expertise is not rendered retrograde by a shiny Humanities 2.0 toolkit. Instead, tinkering slowly re-imagines expertise in English in such a way that 1.0 is forward-compatible with 2.0. One benefit of this model is that it suggests that we, and our students, need not read the digital revolution as the demise of the discipline as we know it, or—less dramatically—the demand for a radically different kind of scholarship. Competencies generally associated with the study of literatures and languages are not irrevocably altered and do not disappear; they are instead mobilized in new domains and situations, with different effects. That is, while digital media do not determine research and authorship practices, English studies must also adapt with them. Tinkering fosters that adaptation.

Outside of English studies, the tinkering impulse is not at all new, and it is worthwhile to note which other fields, traditions, and cultures have been invested in it. For the 2010 Computers and Writing conference, Annette Vee composed a [video essay](#) highlighting tinkering’s legacy in programming, hacking, and engineering. In that video, she describes tinkering as a series of small corrections that aggregate toward a path ahead,

and she links this approach to the importance of social *and* physical feedback in the tinkering process. Toward the end of the video, Vee raises an interesting question, one that is incredibly relevant to this chapter: How might the history of tinkering relate to language and writing? Echoing my observations above, she also hints at how tinkering—at least on its face—appears irrelevant to English, too kinesthetic, too tactile and object-oriented. In light of the interfacing and sensory input afforded by gadgets in Vee’s video, texts seem rather flat and static, banal even. They do not provide the feedback (especially the physical feedback) that Vee stresses throughout her brief history, and they are rather simple in their composition when compared with the technical complexities of a bot or an engine. Even more importantly, the culture for tinkering in English is simply not there. As opposed to scientists and engineers, who are educated in labs and other collaborative environments, or even to artists, who are well-versed in studio-based learning, the stereotype of the run-of-the-mill English scholar is, once again, that “lone scholar”: the isolated writer whose specialties are abstract thinking and single-authored publications.

Proving that this stereotype is just that, many scholars in the humanities are currently experimenting with digital media, collaborative learning, and kinesthetic speculation. Here, Anne Balsamo’s work is of particular relevance. Writing for the MacArthur Foundation in 2009, she explains her inquiry into how museums and libraries might function as nodes for hands-on learning with digital media:

The “learning affordances” made possible by museums and libraries include 1) the possibility of creating physical spaces for face-to-face social interactions that are based in communal “tinkering” practices, 2) the possibility of providing a community-level physical space for the development of embodied learning relationships between members of different generations (youth and adults); and 3) the possibility of serving as the context where digital creative practices (graphics production, video-making, etc.) are connected to the production of physical objects (i.e., through the acts of tinkering with various materials). (para. 2)

Balsamo’s tinkering is by necessity a communal practice. It requires a shared space where people gather around physical objects and experiment with them. Tinkering also necessitates a physical “off-screen” space where those objects are perceived and approached differently by different people, based on age differences and other factors. Finally, and perhaps most obviously, tinkering implies production, and not solely consumption, of media. Importantly, this production involves “embodied learning relationships”—such as “the role of the hand and of the body in the process of learning

and making culture"—that have long been the focus of her work (Balsamo, 2009; see also Balsamo, 1996).

As part of a MacArthur Foundation-funded grant project, Balsamo invited thinkers from a variety of fields to comment on the state of tinkering today and to respond to her comments as I've summarized them above. In "[Videos and Frameworks for 'Tinkering' in a Digital Age](#)" on the MacArthur Foundation's *Spotlight on Digital Media and Learning* Web site, Balsamo (2009) describes her grant project and presents video recordings of participants who joined "a cross-domain discussion about the concept of 'tinkering' as a paradigm for knowledge construction." The CarnegieViews Web site, affiliated with The Carnegie Foundation for the Advancement of Teaching, presents the same videos under the heading [Tinkering as a Mode of Knowledge Production in a Digital Age](#). According to CarnegieViews, "The MacArthur Foundation brought together educators, 'tinkerers,' curators, artists, performers and 'makers' to grapple with questions around ensuring that all students benefit from learning in ways that allow them to participate fully and creatively in public, community, and economic life. . . . [I]nterviews from five of the participants were produced to provide some insights into the thoughtful and passionate conversations from that convening." Three of the five interviews comment on elements of tinkering that hold particular relevance for the tinker-centric pedagogy that I will describe later in the chapter.

First, San Francisco artist, performer, and teacher, Jamie Cortez, notes that tinkering is comparable to testing, or a kind of creative and repetitive process. In "[Try it and Fail](#)," he says it involves "trying and adjusting and getting back up and going at it again," while also tacitly implying that trial and error are more fitting terms for tinkering than, say, success or failure. Although Cortez's perspective does not necessarily resonate with Vee's history, I find the rhetoric of trial and error (instead of repeated failure) more fitting for English studies. Such language does not assume there is a pre-existing ideal toward which tinkering gravitates. It also underscores the prevalence of chance in any tinkering practice.

Second, Allison Clark of the University of Illinois, Urbana-Champaign, picks up Balsamo's emphasis on communal learning spaces and speaks to lab-like settings that are quite different from a more traditional computer lab replete with desktops. In "[You Can Still Be You and Become a Scientist](#)," she describes a project with which she is affiliated—the Hip Hop Information Technology Tour (HHITT)—as "a lab where kids can come on and tinker with technology." She adds, "There's a . . . music studio. There's a connection between math and music," and that connection makes math or science less intimidating to youth, especially youth who are traditionally underrepresented in those fields. This emphasis on making math or science less intimidating is quite appealing to

my inquiry here, as it imagines competency acquisition as, first and foremost, a matter of culture and setting. As Clark argues, tinkering is not about mastery or control. It is an ad-hoc form of exploring what possibilities are available and developing confidence in those possibilities through trial and error.

Finally, in “[The Open Architectural Studio](#),” well-known scientist, writer, and teacher John Seely Brown highlights how tinkering encourages students to “embrace change,” “play with knowledge,” and—perhaps most suggestively—“create knowledge on the fly.” Unfortunately, the spaces and opportunities for such learning are few, and Brown argues that all too often the imagination of young learners is not fostered by normative learning climates. Like Vee, I find Brown’s investment in context-dependent experimentation crucial. This investment does not imply that experimentation warrants no pedagogy. Instead, it necessitates relocating pedagogy in English studies away from the solitary learner model and toward the collaborative spaces and communal practices emphasized by practitioners such as Balsamo, Brown, Cortez, and Clark.

With this context in mind, I want to transition into some basic principles for what I call tinker-centric pedagogy in English studies and to elaborate upon them. Tinkering in literature and language classrooms privileges:

1. Adaptability in planning, where the results are not always anticipated (Kelty, 2008),
2. Constant negotiation with a variety of materials in order to test what kinds of compositions they accommodate or restrict (Pickering, 1995),
3. Resisting readymade, acontextual tutorials for composing media and experimenting with technologies (Latour, 1987),
4. Collaboration through “boundary objects,” or objects that meet the informational needs of various social groups while also being put to different uses (Star & Griesemer, 1989; Bowker & Star, 1999), and
5. A view from outside of prominent computing disciplines (e.g., computer science), with humanists expressing their own forms of technological and media literacy.

To flesh these out, below I provide examples of how to incorporate each into prompts, workshops, and exercises. Throughout, I stress how collaboration not only enhances tinker-centric pedagogy but is also central to it. And while the following sections do not emerge from a formal study, they are intended to prompt those studies and—at this still formative stage of intersecting digital media with English studies in higher education—invite more tinker-centric experimentation in language and literature classrooms. Such research would no doubt enhance humanities pedagogy as learning climates grow increasingly collaborative and digital in character.

## ADAPTABILITY IN PLANNING: CHANGE LOGS AND NON-SEQUENTIAL PARAGRAPHS

In my writing-intensive courses, students are usually required to submit a ten- to fifteen-page academic essay that has been revised. In tandem with this essay, I ask them to compose abstracts, annotated bibliographies, and close readings and submit them to a multi-authored WordPress blog. These shorter assignments might be read as ways of scaffolding the writing process. However, what scaffolding often implies is the iterative development of a project through a series of upward- or forward-moving steps, revisions included. For instance, in a series of short assignments, students might practice how to write claims, assess warrants, examine evidence, and develop persuasive paragraphs. Later in the course, these exercises are compiled and mobilized together in a longer academic argument. Tinkering in literature and language classrooms intervenes in the scaffolding process by having students imagine a “big idea” that is somehow relevant to the course topic and then experiment with multiple ways of approaching it. Writing exercises, such as claims-making and warrant assessments are then integrated into those experimentations. This approach is all the more motivating for students if it emerges from their own interests, majors, educational goals, or previous coursework. For instance, a biochemistry student who is taking an English course on literary modernism might be curious about how science is depicted in modernist novels and to what effects on its popular perception. This idea can be approached from multiple angles, and the class can become an opportunity for the student to engage some of those angles, test them out on various audiences through an array of media, and acquire some basic composition competencies in the process.

Put this way, the key to a tinker-centric pedagogy is having students document what changes from experiment to experiment. One way to do so is through what I call “change logs” (see Figure 1), a term common in the parlance of software and hardware development. Often found in HTML, CSS, and PHP files, change logs document the alterations made to a file. In literature and language classrooms, they can function in a similar way by asking students to compose often (through a variety of media) and to articulate, at the end of the assignment, how their “big idea” changed during the process. Attention to change can be prompted through a number of questions, such as:

- What did you learn about your idea that you had not considered before?
- How did composing in a new medium affect your perception of the idea?
- While thinking experimentally and looking for evidence, what did not work?
- Where did your idea meet resistance?

No doubt, the rhetorics of tinkering—situated in testing, play, and experimentation—are crucial here. Change logs must be imagined and presented as low-stakes assignments, even if they are pivotal to the learning that takes place. Through them, students test their ideas; instructors do not test the students.

This quarter, we've spent some time talking about three (broad) ways of approaching modernist lit: through questions of aesthetics, representation, and history.

For this prompt, let's try picking one of those lenses and reading&writing accordingly.

In your own blog entry, please:

First, **identify your lens** (aesthetics, representation, or history) and just write it at the top of your entry.

Second, select at least one portion from the **first half of Mrs. Dalloway** and analyze it through the lens you selected. (Here, you only need to write a paragraph or two.)

Optional: use your cluster's keyword (or another keyword from the course) to refine your analysis.

Finally, after your analysis, please write a short bit on how you think **your lens influenced your reading&writing** and to what effects on your interpretation. (If you are having difficulty getting started, then consider some of these questions: With your lens in mind, what did you include in your analysis? What did you exclude? How did focusing help you articulate an observation or two? How did the exercise inform your perceptions of modernism? How did it help you prepare for your final essay?)

Please post your entry before our meeting on **Wednesday, May 12th**. And before Thursday's meeting, please comment on a post by a peer in your cluster.

Don't forget! Every entry on the blog should be categorized and include an image and three tags. The category for this entry is "#4".

Did you forget how to embed a custom image? [Here's a review of how-to.](#) & remember: [There's a protocol for commenting, folks.](#)

See me with questions!

**Figure 1.** ["Change Log" prompt.](#)

As with cultures of software and hardware development, change logs in literature and language classrooms also force students to “version” their work. As a form of documentation, change logs chronicle specific moments in the process when the shape of an idea is notably altered—when Idea 1.0 becomes Idea 1.1 or even 2.0. In a collaborative climate, attention to such alterations can be fostered through instructor or peer feedback on a blog (e.g., comments on entries) or in-class workshops where students circulate their change logs. Regardless of how that attention is fostered, the

point is for students to be aware of it, explain it, label it (e.g., Version 1.0 or 1.1), and ultimately become comfortable with moving “backward” across versions from, say, Version 3.2 to Version 2.1. In contrast, perhaps, to the tendencies of scaffolding and technological progress, tinkering acknowledges that often the first trial was ultimately more persuasive than the fourth or fifth. Or put differently, it is always possible that the original version of the idea was the best one. While some composition competencies (e.g., claims-making, warrant assessments, and audience and genre awareness) may have been developed along the way, the emphasis of tinker-centric pedagogy rests less in scaffolding a final essay with those competencies and more in ideating multiple versions of that essay. Change logs therefore allow students not only to serialize and chronicle how their ideas are altered and when but also to return to earlier versions, test them again, and adapt their ideas accordingly.

Regarding adaptability, tinker-centric pedagogy is also premised on the repeated rearrangement of ideas. Subtending this approach is a heavy emphasis on design and readings from a distance, or from the aggregate view (Moretti, 2005). Building upon hypertext’s tradition of random-access narratives, one way of helping students grapple with design and distant reading in literature and language classrooms is by writing non-sequential paragraphs.

The “Non-Sequential Paragraphs” prompt (see Figure 2) asks students to begin writing a ten- to fifteen-page academic essay by submitting four paragraphs that would not follow each other directly (i.e., not the first four paragraphs of the essay). Instead, they write four “stress points” in the essay that address crucial testing grounds for their idea. They then circulate print versions of the four paragraphs in a writing workshop without giving their peers any sense of what the intended arrangement of the paragraphs might be (e.g., paragraph 1 on page 3, and paragraph 2 on page 6). Aside from providing feedback on the writing itself, their peers also arrange the paragraphs (much in the fashion of bricolage), number them in the order they think the paragraphs might appear in an essay, and articulate what types of claims, contexts, and evidence would need to precede and follow each paragraph.

Hello, 242! At this point in the quarter (post-annotated bib and with research question in hand), how about drafting four paragraphs that should ideally become key parts of your final essay?

In response to this prompt, please post your own blog entry, which should include **four paragraphs** that:

Emerge from the research both you and your cluster have already done on your keyword.  
(Pssst... Don't forget about the Zotero group!)

For evidence, draw upon (e.g., quote, analyze) the **primary sources and secondary sources** you listed in your annotated bib.

**Cite** that evidence (using your preferred annotation style).

Include (across all four paragraphs) the use of at least one piece of **non-textual evidence**. (Put differently, only one paragraph of the four has to include non-textual media.)

Unpack some responses to the research question you wrote.

Consist of at least **250 words** each. (Remember the first paragraph exercise?).

**Are not articulated in sequential order.**

With the exception of that last one, I think all of the above requirements should be pretty clear. (If not, then let me know!)

As for "not articulated in sequential order," I am asking you to please treat these paragraphs as "instances" or "snapshots" or "stress points" that might occur in your final essay, meaning they should not follow the order of, say: first-second-third-fourth paragraph in the essay. Instead, please consider writing paragraphs that might occur on, say: page one, page four, page seven, and page nine.

Yes: such an exercise might require you to sketch out what happens, exactly, between the instances. Nevertheless, I encourage you to refrain from writing the whole kit, especially before you workshop these four. (More below.)

**Figure 2.** "Non-Sequential Paragraphs" prompt.

From one perspective, this collaborative workshop is an engaging, hands-on exercise for students. It is deeply linked to traditions in mashup, collage, or remix cultures. Language is treated very materially, as printed pages are moved around and ordered in a particular fashion. Comparable to Balsamo's (2009) emphasis on kinesthetic learning, writing non-sequential paragraphs affords students the opportunity to see, quite tangibly, how the materiality of media affects interpretation. It also switches the modality through which students typically learn (i.e., computer-based composition), giving them the time and space to step away from the screen. Additionally—and perhaps most relevant to the notion of adaptability in planning—feedback during this exercise lends itself to surprise. The peers' arrangement of paragraphs is often not what was intended,

and peers frequently ask for more information before and after each paragraph than what was forecasted. These kinds of responses help students critique what can often become the most deterministic template in the field of writing—the sequential (or linear) outline—and, in some sense, become familiar with the concepts of nonlinearity, hyperlinking, and information design that influence digital media and Web-based reading. Peers collaborate to reshape what might otherwise be a rigid outline and suggest new trajectories for the ideas at play in the essay. Ideally, these reshapings and suggestions are documented in a student's change log.

Both of these assignments translate proto-print authorship into digital domains because they get students thinking about the force of the readymade structures (e.g., templates) to which content is often added in Web 2.0 writing spaces. As a practice with a history in markup languages, code, and programming, the change log privileges alterations to the design of an idea and tinkering with the possible versions it can assume. As a more hands-on experimentation with the arrangement of that idea on paper, non-sequential paragraphs emphasize how the order of things is inherently an argument, regardless of whether readers are aware of it (Arola, 2010). Together, and especially when integrated with some of the other assignments that follow below, these two exercises offer basic introductions to digital media, where writing must be broadly understood beyond content. In both exercises, writing is always framed, composed, and materialized in specific ways. Further, when those frames, compositions, and materializations shift or are remediated, students can test and articulate the consequences of that shift from, say, print to a WordPress blog (Bolter & Grusin, 1999).

### **CONSTANT NEGOTIATION WITH MATERIALS AND SAYING NO TO TUTORIALS: TEACHING CODE AS LANGUAGE**

Tinker-centric pedagogy requires students to acquire some basic competencies in code and markup languages, and—at least in my classes—this learning takes place through WordPress, Dreamweaver, TextPad, and handwritten quizzes (usually on HTML and CSS). Later in this chapter, I argue that technical competencies in the humanities must, by necessity, differ from those in computing disciplines (like computer science). Here, that claim is important because tinker-centric pedagogy does not treat code or markup abstractly, as somehow outside of history or context. It is available somewhere, and it is doing something specific there, with certain audiences in mind. The question is how to locate it, test it in a different location, and see what happens. Framed this way, tinker-centric pedagogy treats code and markup in a way that is comparable to how a student of English would treat literature or language. It also acknowledges that, for many in the humanities, one of the main obstacles for transitioning into digital media is learning code and markup. After all, unlike print text, code is an executable language (Galloway,

2004). For these reasons, the code and markup I teach are almost always borrowed from an existing work of electronic literature, rather than from tutorials in a book or on a Web site. Starting with an existing work is a less intimidating way for non-experts to engage code and markup, and the literary text is a more familiar domain for English students. Aside from having the code and literary text already available and in circulation, starting with an existing work like an electronic poem or a hypertext novel also frames the engagement through speculation and curiosity instead of knowability, quantification, or memorization (Drucker, 2009).

I begin by showing students how to view a page's source using a Web browser, and then we copy it into TextPad or Dreamweaver, talk about how the text is marked-up or encoded, speculate about what certain tags (e.g., `<body>`, `<p>`, `<em>`, or `<li>`) may or may not do, and begin tinkering with them (see Figure 3). This sort of exercise is especially productive for humanities students who typically know little to nothing about code, and all the more so when it is conducted in collaborative groups, where students can share ideas and advice. It gives them the opportunity to try new tags, rearrange them, restructure texts, and—above all else—become comfortable with error messages and accidents. Indeed, with tinkering comes the “broken” text: code accommodates and restricts certain material behaviors (Pickering, 1995). The 404 message is inevitable. And that is familiar territory to technology professionals. For humanities students, the aim is to identify how the error happens—using, for example, a [W3C validator](#)—and then how to document it, replicate it, and fix it. If such exercises are conducted earlier in the quarter or semester, then they can really enable students to start writing in code and marking up on blogging platforms like WordPress. Later in the class, it also helps to transition code from the screen to paper, having students quickly mark up an existing work by hand or free-code something in response to a prompt. This activity is but one more exercise that reminds everyone involved how digital and analog materials, their cultures, and their legacies are constantly in exchange, not worlds apart. Although, on paper, code cannot be executed, a long history of writing still influences how it is perceived.

**xhtml & css exercise**

mapping the digital humanities, spring 2009, university of washington

From Jorge Luis Borges's ["The Garden of Forking Paths"](#): *Everyone pictured two projects; it occurred to no one that book and labyrinth were one and the same.*

For this exercise, you should essentially repeat what we did in [Module 2](#), but this time with a text of your choice (e.g., a paper you've written, a novel or poem you've read/studied, an article from another class or research project). Of course, you can continue marking up Gertrude Stein. I'm sure she wouldn't mind. Just pick something other than "A BOX," k?

Please follow the format of [the example from Module 2](#). Just "view source" for the XHTML file entitled "index", and [use the CSS](#) as a reference. Note that the example includes a short encoded selection from Stein's [Tender Buttons](#), an explanation of the paradigm used to encode the text, and some findings. Please publish your XHTML and CSS files to: [students.washington.edu/\[yourUWnetID\]/chid498/](http://students.washington.edu/[yourUWnetID]/chid498/)

**Outcomes**

Your final web page should

- Include a brief excerpt (no more than 250 words) from the text you selected. Please cite the source of your text (e.g., in MLA, APA).
- Include the following elements: `<html>`, `<head>`, `<title>`, `<link>` (to your CSS file), `<body>`, `<p>`, and `<a>` (with "href" and "title"). `<meta>` elements for "author", "description", and "keywords" are encouraged. You are welcome to use more elements as you wish.

**Figure 3.** "View Source" assignment.

## COLLABORATION THROUGH BOUNDARY OBJECTS: CLUSTERING AROUND KEYWORDS

Along the same lines of an exchange between things analog and things digital—or things both off screen and on—tinker-centric pedagogy is also motivated by the use of boundary objects, or objects that meet the informational needs of various social groups while also being put to different uses (Star & Griesemer, 1989; Bowker & Star, 1999). Perhaps rather obviously, sharing boundary objects facilitates conversation and collaboration. In the computer-integrated class, it might mean shifting student attention from the twenty or thirty computer displays in the room toward a single object (e.g., a large blank piece of paper or a map). The advantage of this technique is that it takes otherwise isolated observations and aggregates them in the same space. It also fosters the kind of communal practices stressed by Balsamo, Seely Brown, Cortez, and Clark. Yet most importantly, it invites groups to modify or repurpose the physical object collaboratively in order to test what behaviors and ideas it might enable.

Such exercises might sound more like the domain of science labs; however, in my classes I have had tremendous success asking students to cluster in small groups of five to eight people around "keywords" of their choice. As Figure 4 demonstrates, the keyword invites collaboration through a variety of ways. On a course blog, it becomes an organizing principle. Every entry that a student in a given cluster posts on the course

blog might be tagged folksonomically through descriptive metadata with the cluster's keyword. Clicking on that tag (either in a tag cloud or in the blog entry itself) will render the results for every entry associated with that keyword.

Ok, 242. With this prompt we begin thinking about more concretely about your paper for this course, as well as how to collaboratively cluster around a keyword, collectively share your research, and offer each other feedback during the writing process.

Before we begin, let's consider something Raymond Williams writes in the introduction to *Keywords: A Vocabulary of Culture and Society*:

The questions are not only about meaning; in most cases, inevitably, they are about meanings.... The original meanings of words are always interesting. But what is often most interesting is the subsequent variation.... [I]mportant social and historical processes occur within language, in ways which indicate how integral the problems of meanings and of relationships really are. (16, 20-21, 22)

As a primer for your paper, this prompt asks you not only to define a word. It also asks you to privilege variation and to start highlighting where and how variation occurs. As the class progresses, you'll gather more materials (e.g., through an annotated bibliography and Zotero) that allow you to better determine how, exactly, social and historical processes happen within the keyword your cluster selected.

**Figure 4.** ["Keywords" prompt](#).

Also, in terms of research, students can use the keyword to divide and conquer while, say, compiling a collaboratively annotated bibliography. One student might search for journal articles related to the keyword; another might find relevant digital images, videos, or audio; and yet another might concentrate on primary sources, various definitions in reference texts, and so on. Research tools such as [Zotero](#) are quite handy here. As an extension for the Firefox Web browser, Zotero allows users to gather the metadata for their sources, as well as relevant URLs and screen shots, and circulate them via shared libraries. For keyword clusters, the shared libraries can be named after the keyword students choose.

Off the screen, keyword clusters can also become vehicles for forms of collaboration that are less networked (e.g., through metadata online) and more face-to-face. In the past, I have tried printing a cluster's keyword on a large sheet of paper and stapling to it other sheets that suggest how the word is being mobilized in similar and different ways by students in the cluster. For instance, sheets attached to the primary keyword might read, "warrants," "sources," "definitions," and "claims." On each sheet, students then provide the information that is relevant to the keyword. What are its multiple definitions? What claims are students making through it? What assumptions does the keyword

enable, and to what effects? What kinds of evidence or sources are students using to learn more? And so on.

On its face, this exercise appears to be an analog or low-tech form of social networking and information aggregation. But it differs not only in the sense that students are collaborating through face-to-face conversation and interaction; they are also actually sharing the keyword as an in-hand, material artifact. What the latter affords that the former does not is a more tangible practice with the kinds of work that language accommodates and restricts. Language becomes a testing ground for experimentation, feedback, and knowledge on the fly. Two conflicting arguments may emerge from the same keyword exercise. The challenge, then, is to get students thinking beyond which argument is more persuasive. As a testing ground and shared space, the question is how a single word becomes a mechanism for generating an array of problems, claims, and ideas, each with its own version (Williams, 1976). With this approach in mind, students can then work less and less in isolation, draw upon and document each other's work, and even collaboratively compose essays or other media.

## VIEWS FROM THE OUTSIDE: ANOTHER ARGUMENT FOR CONTEXT-PROVIDERS

That gesture—toward collaborative composition—has recently steered me toward a new speculation for tinker-centric pedagogy: students and instructors in literature and language courses acting as “context-providers.” The term—somewhat popular in fields such as computer science, information management, and interaction design—is also favored by media artist Sharon Daniel (2007). For Daniel, a context-provider aims to create spaces that inspire or otherwise encourage others to contribute content. During her own work, Daniel has collaborated with former injection drug users, women in California’s correctional facilities, and others. Through these collaborations, she helps communities develop some competencies (e.g., how to use technologies for the purposes of self-representation), and she also records their oral histories. Ultimately, these stories are circulated through Daniel’s digital art, which can be found online [in the journal Vectors](#) and in galleries. Recently, I experimented with Daniel’s notion of the context-provider through a thirty-one-person course on digital collaboration and publication. The course focused on do-it-yourself music cultures and their relevance today (see Figure 5).

**digital media workshop**  
do-it-yourself music cultures

**search**

**info**

Thanks for visiting! This is the course site for BISMCS 343A (Winter 2011), taught by Jentery Sayers at the University of Washington, Bothell.

Download the course policies and syllabus (PDF), or read them in the navigation bar at the top of this site. There is also a passcode-protected blog for students contributing to the course. Our Twitter hashtag: #bis343.

**categories**

- announcements (2)
- collections (2)
- listening (1)
- notes (1)
- prompts (4)
- reading (3)
- tutorials (1)

**related news**

The search for a minimum viable

Figure 5. [“Do-It-Yourself Music Cultures” course site.](#)

Collectively, the students and I worked with University of Washington Libraries to develop an online exhibit to which over thirty-five of the university’s community partners contributed content. For the students and me, tinkering became a means to repeatedly test that exhibit based upon the needs and desires of another group—giving the online space over to them (boundary object-like) to determine what worked and what did not. By the quarter’s end, student writing often looked more like code or interface design, and in many ways it was less visible than the digital assets (e.g., images, video, and audio) our community partners contributed. Nonetheless, the collaborative learning was incredibly rigorous. All involved had to imagine how the exhibit would function and be sustained after the course was over: where it would be stored, who (to return to Woodward’s point) would curate it, how additional content would be added, and even how the design might be altered. What’s more, the students and I had to situate ourselves as learners curious about the cultural, aesthetic, and social implications of new technologies and media. Our aim was not always technical elegance, and our expertise did not emerge from quantitative approaches or mastery over content. Instead, our motivation was to repeatedly connect new technologies and media to tangible contexts, material situations, and off-screen issues, all toward seeing what exciting correspondences could be sparked in experimental, shared spaces.

## NOTES TOWARD FURTHER STUDY

Overall, the aim of this essay has been to pose some possible trajectories for tinkering in language and literature classrooms. I have theorized and provided examples of tinker-centric pedagogy as a starting place for future conversations. More formal *in situ* research needs to be conducted in order to determine—more concretely—how humanities pedagogy can benefit from tinkering. Such research may be framed around three general areas of inquiry: the space of the classroom, the expectations of English studies, and the value of collaborative work. Related to the first are questions about what tinker-centric learning spaces look like and how they differ (if at all) from more traditional classroom arrangements. The videos discussed and linked to earlier in the chapter suggest that spaces conducive to tinkering are frequently decentralized, with instructors functioning more like facilitators than lecturers. What's more, the physical design of classrooms may need to be reimagined with shared boundary objects and hands-on experimentation in mind, perhaps using studio spaces in art or even labs in the sciences as models. To this end, spaces where students are contiguous and individuated (e.g., seated at individual desks or staring at personal computers) may need to be reshaped with more modularity and flexibility in mind (e.g., open spaces in the classroom or movable furniture). Testing various classroom formations and formally documenting what changes across them would no doubt be an informative study for practitioners of digital media in English studies.

Such reworkings of classroom spaces raise associated questions about what students and scholars of English studies now expect from the field. For instance, how is “writing” or “composing” to be understood and practiced? In which situations is collaborative writing or composition a best practice and why? How does (the study of) literature change across media, from print to electronic formats? How might students learn to articulate arguments across a spectrum of modalities (e.g., watching, listening, and reading)? But most importantly, when students of English enter today’s higher education classroom, what do they want to learn, what do they need to learn, and to what effects? To reiterate a claim I made earlier, this question—which is ultimately about the relevance of English in a contemporary moment—need not imply that the English studies of yore is becoming wholly obsolete. It is to suggest that, with the increasing prevalence of digital media in higher education, English is in transition. And we cannot afford to address that transition individually.

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## APPENDIX A: COURSE DESCRIPTION

### *Digital Publication and Collaboration: Puget Sound DIY Cultures in the 1990s*

This course is an introduction to collaboratively composing and curating digital content using multi-authored, Web-based platforms. As a class, we will collectively use the WordPress platform to publish what might be called an online “archive” of media assets (such as digital video, audio, images, and text files). Rather than writing individual essays or producing work independently, all of us will collaboratively design the archive from scratch. This collaboration will require students to determine their own roles and responsibilities as the project develops.

Such roles involve web design, content management, outreach, and media production. No previous experience in any of these domains will be assumed, and I will encourage students to develop competencies in areas (e.g., Web development, video composition, digitization, and interviewing) new to them.

Of course, the project necessitates both a context and some content. To that end, we will be in conversation with our partners in the Puget Sound region, specifically musicians, technologists, artists, and thinkers who were somehow involved in “do-it-yourself” (DIY) cultures during the 1990s, a decade when DIY was rich in the Puget Sound. At its core, a term like “DIY” is subject to debate. Why does DIY matter today, especially when so many things are composed digitally? What does it mean in the first place? What is made and how? How is it motivated? For whom? And to what effects on people’s perceptions of local culture? We’ll unpack these questions as a class and with our community partners, who will visit the class to present their differing perspectives and artifacts. Students will be expected to work with these partners to digitize existing materials (e.g., print texts and analog recordings) from the 1990s, conduct interviews, and research the region for assets that could be included in the archive. In so doing, we will learn more about the politics, aesthetics, and history of local DIY cultures and do our best to represent the complex and often contentious diversity of that spectrum on the Web.

There is no textbook for the course, and most of the course material will be provided by our community partners. I will supplement this material with some example digital archives that may serve as influences, as well as some texts that will provide us with some histories and theories related to DIY culture.

By the quarter's end, students will be expected to:

- Develop competencies in Web-based and face-to-face collaboration and present collaboratively authored material to several audiences (e.g., academics, enthusiasts, and local artists),
- Demonstrate an awareness of how to compose with multiple media (e.g., video, audio, and text) that engage various modalities (e.g., watching, reading, and listening),
- Articulate how the design of Web-based content influences people's interpretations of and access to it, and
- Create a digital archive consisting of at least fifty media assets, publish it on the Web, and develop a post-quarter sustainability plan for it.

While everyone's final project will be the digital archive of Puget Sound DIY cultures we are collaboratively creating, students will be expected to assess (in writing) both their individual contributions and the contributions of their peers. The evaluation of student work will be based on the quality of the archive at the end of the quarter; the potential of that archive to grow, engage multiple audiences, and provide people with access to new assets and information; our community partners' commentary on the archive; participation both in and outside of class; and the critical awareness demonstrated in their writing about the archive and its development.

Class meetings will occur in a computer-integrated classroom, with learning modules on WordPress, Audacity, Final Cut Pro, HTML, and CSS. No previous experience in media production or Web development is assumed.