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Sketching as an ally in the first-year composition classroom

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Sketching as an Ally in the First-Year Composition Classroom

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Kenneth P. Webb

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Abstract

This thesis explores the possible use of sketching as a pedagogical tool in the first-year composition classroom. The digital age has brought with it a wealth of new (and culturally significant) multimodal compositions, that is, compositions that use multiple modes of communication. In particular, visual modes of communication are growing increasingly important. Furthermore, new ways of sharing information has lead to an accelerating proliferation of new media that increasingly blends visual and verbal elements in the creation of compositions. College students, in the midst of grappling with these new challenges, and with the promise of unforeseen multimodal genres in the future, will need the ability not only to dissect specific genres, but also to develop methods for understanding and creating a wide range of multimodal texts. To equip students with the tools they will need to construct these constantly shifting multimodal compositions, this thesis argues that teachers should use sketching to afford students the opportunity to create images as well as analyze them. By synthesizing a concept of sketching from a number of literary, professional, and academic sources, this thesis seeks to understand the value of sketching as a powerful tool to promote problem-solving, idea generation, and the communication of visual ideas.

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1.1 Accelerating Changes in Media

Before high school, if I wanted to get in touch with a friend, I picked up our landline phone (which we referred to simply as our phone because there was no other kind of phone for us) and dialed him up, or waited until we saw each other next. Before college, if I wanted to watch a movie, I could drive to a theater or pop in a DVD. Before I began graduate coursework, if I wanted to catch up on the latest news in my favorite hobby, I would generally have to rely on word of mouth from my friends.

In the span of no more than a decade, I can now get in touch with my friend via email, text, Tweet, Skype, Facebook, or face-to face talk over a mobile device in real time. Much of this was literally science fiction when I was a boy. If I want to watch a movie, I can download from iTunes, or rent unlimited movies from Netflix, or watch movies directly over my gaming console or anywhere on my tablet. And to keep up with my hobbies, my browser is filled with bookmarks of blogs, podcasts, video channels, live Ustream shows, and online magazines.

Impressive as this proliferation of media and genre is over so short a time, it will surely pale in comparison with what changes today's first-year students will encounter over the course of their education and their lives. Compare the changes in technology, media, and genre over the last twenty years with the changes in the twenty years before that. The changes in how texts are produced and consumed are coming at a blistering rate, but even the rate at which they change is increasing. Each new technology, each new social media opens a new channel for the dissemination of information, and each affects the other. Take, for example, the seemingly straightforward example of Twitter, a

service that allows its users to gather followers and to follow others, all by composing short messages (140 characters or less) that are broadcast to followers. But this apparently simple service takes cues from social networking (followers and groups), Facebook in particular (status updates), blogs (regular posts listed in reverse chronological order), and instant messaging (followers can "tweet" one another directly). Twitter, as a new social media through which texts are produced and consumed, became possible *because* of the proliferation of media before it, and its creation influences and contributes to the generation of more new media.

In general, new media depends on already existing media for generation. J. David Bolter and Richard Grusin, authors of *Remediation: Understanding New Media*, provide a key trait of all new media, namely that they "absorb and repurpose" the media that came before them (48). Both creators and users of media understand new media in terms of other media. Bolter and Grusin offer the example of video games *Myst* and *Doom*, both of which were understood as "interactive films," in which "the idea is that the players become characters in a cinematic narrative," just as in the previous example Twitter can be understood as a microblog or a new take on social networking (47). Again, this is not merely an effect of users struggling to understand something new in terms of the familiar, although users certainly have an impact on the creation and implementation of new media. Rather, it is in the nature of new media to assimilate and modify already-existing media. The authors postulate that this process, which they term *remediation*, constitutes "a more complex kind of borrowing in which one medium is itself incorporated or represented in another medium" (45). In particular, the authors note that "the digital medium can be more aggressive in its remediation" (46). The digital age

quickens the pace at which new media can be introduced, discussed, and adapted, resulting in a proliferation of new media. Furthermore, a higher concentration of new media only creates more possibilities for the absorption and repurposing of media. In other words, the digital age represents a critical mass of new media and genre, a self-reinforcing cycle that leads to ever faster production of media.

However, the accelerating changes in media do not stop with merely the production of new media. Texts themselves are becoming increasingly complex in terms of multimodality. Again, looking at the relatively straightforward example of Twitter, users must consider the image they put forward with profile pictures, the information (or lack of information) presented in their profile's background, not to mention images and videos to be linked to or created and shared via Twitter. Note especially that even in such an ostensibly text-oriented medium centered on the production of messages comprised of a set number of characters, visual elements strongly influence the medium.

Put another way, "the very multiplicity of ways that are currently open for composition and communication challenges long-held understandings of literacy education, especially their evolutionary nature" (Kimber and Wyatt-Smith 71). The definition of what kinds of activities count as composition is changing rapidly in parallel with evolving forms of media, which means that composition instructors must adjust their methods to teach students in this evolving, multimodal vision of composition. The "evolutionary nature" of composition and communication is especially relevant, given that a swath of new media and genres are constantly adapting to new technologies and ways of sharing information.

In short, the media and genres through which we create and consume compositions are changing at an accelerating pace, and they are becoming increasingly multimodal and dependent on visual data. Furthermore, as we continue to explore the ramifications of an increasingly interconnected world, a world with mobile access to dynamic texts, we can expect an increasing dependence on documents that are not merely textual, but that also tap into the visual. As we continue the march into this brave new world, we as teachers must consider how best to arm students not only for what challenges they will face as writers today, but the challenges they will face in a world of constantly changing media.

1.2 Multimodality, Genre, and an Adaptable Model

Teachers of composition and scholars of composition pedagogy have certainly noticed this proliferation of multimodal compositions, and they have recognized it both as an obstacle that must be addressed, but also as an opportunity to teach students to write in a way that more deeply engages their readers (Kress; Stroupe; Edwards-Groves; Selfe; Fraiberg). Indeed, multimodal studies and the word *multimodal* itself have come out of this necessary change in the way we consider and create compositions.

Daniel Anderson, Anthony Atkins, and Cheryl Ball broadly define multimodal composition as a "theory of semiosis that acknowledges the practices of human sign-makers who select from a number of modalities for expression (including sound, image, and animation, for example), depending on rhetorical and material contexts within which the communication was being designed and distributed" (59). In short, multimodality is no new phenomenon in composition. Indeed, sound and image have long been

recognized as integral parts of rhetoric through many disciplines besides composition and rhetoric, including communication studies, advertising, and industrial design. Multimodality *has*, however, been made increasingly visible and increasingly vital to composition with the proliferation of electronic media that take advantage of multiple modes of communication. As Anderson, Atkins, and Ball note, the modalities of expression used to create a composition depend largely on the "material contexts" and the means of distribution (59). As the means of creation and distribution of compositions turn more and more to the virtual world, the possibilities for expression expand, and writers must learn to adapt to writing scenes that demand expression beyond the verbal, most notably the visual. Consequently, teachers also must adapt to be able to prepare students for these writing scenes.

In a 2005 study entitled "Integrating Multimodality into Composition Curricula," Anderson, Atkins, and Ball sought to discover how teachers typically incorporate multimodality and multimodal awareness into their classrooms:

> [Their] aim was to learn more about what composition teachers were doing with multimodal composing, what technologies they used in support of composing multimodal texts, and how faculty and administrators perceived efforts to introduce multimodal composition into departmental curricula and professional development. (63)

The authors, more simply put, sought a snapshot of what teaching multimodal composition looked like in its current state in U.S. colleges. The study consisted of a survey across 63 schools throughout the country determining the perspective of both individual teachers and composition departments as a whole.

The study found that teachers of multimodal composition tend strongly to instruct through student analysis and creation of specific multimodal pieces, including photographs, print advertisements, films, video blogs and Flash movies, podcasts, web pages, and interactive DVD texts (75). In other words, most teaching of multimodal compositions amounts to the teaching of one or more selected genres from an enormous genre system of multimodal compositions. Teaching multimodality and media literacy through these specific genres is both valuable and relevant for our students, and the project of this thesis is in no way to dissuade teachers from using this method. However, by itself, this commonly used method does not directly address the "evolutionary nature" of multimodal composition, the accelerating pace at which modes of composition are changing. In other words, teaching specific genres of multimodal composition will not have much value in a world where such genres spring up, evolve, recombine, and vanish rapidly.

In this way, multimodality shares characteristics with the varying schools of genre study and its pedagogy. Compare the findings of Anderson, Atkins, and Ball on modern teaching of multimodality with the teaching of English for Specific Purposes (ESP) and Systemic Functional Linguistics (SFL). These schools of genre pedagogy help writers build their skills by examining, explicating, and imitating specific texts within a genre. According to genre scholar Ken Hyland, the advantage to this technique is that it "offers writers an explicit understanding of how target texts are structured and why they are written the way they are," making it "clear what is to be learned rather than relying on hit-or-miss inductive methods" (11). In the same way, teachers of multimodal

composition tend to provide their students with such an "explicit understanding" of how specific multimodal texts operate, and what underpins the structure of such texts.

However, we should also acknowledge the alternative method for teaching genre, what Hyland obliquely refers to as the "hit-or-miss inductive methods." Rhetorical Genre Studies (RGS) embodies a philosophy of genre that goes beyond the understanding of instances within a genre. Summarizing the tenets of RGS, Anis S. Bawarshi and Mary Jo Reiff explain that the theory is built "on the idea that knowledge formation, genre formation, and socio-historical formation are interconnected" and that "genres dynamically embody a community's ways of knowing, being, and acting" (78). This description applies perfectly to the sorts of multimodal compositions students are learning today, including the aforementioned video blogs, flash movies, podcasts, and web pages among a plethora of others. As Bawarshi and Reiff describe RGS, these multimodal genres embody the notion that genre, knowledge, and culture are intertwined. Multimodal genres reflect the changes in the way information is shared, in terms of speed of communication, the increasing size of the audience, and the kinds of new presentation modes available (such as image, video, sound, and animation). Importantly, RGS notes that "genres *dynamically* embody a community's ways of knowing, being, and acting," acknowledging the fact that just as our ways of knowing, being, and acting undergo constant changes, so too do the means through which we communicate (78, emphasis mine).

Given the dynamic nature of genres, a product of the dynamism of communities, RGS holds that genre knowledge cannot be taught solely through explicit instruction about given genres. In other words, genres constantly shift and adapt in response to the

needs and actions of the people who use them. Genres constantly change, so we cannot learn genres solely by learning the formal features that currently describe a genre. The same can be said of multimodal genres. Students certainly need to be able to understand and create many of these specific multimodal texts, but as media continue to shift and change, students more and more will need a generalized framework they can turn to in order to effectively unite the verbal and the visual into cohesive compositions. They will not only need to be able to leave our classrooms with an understanding of how to create a handful of the multimodal genres available to composition today, they will need a rhetorical tool that they can transfer to current and future multimodal genres in order to understand, analyze, and produce them. They will need a model that can be adapted and applied to a wide range of writing situations that unite verbal and visual modes.

1.3 The Partial Occlusion of Visual Literacy

In the early 1990s, at the very outset of the digital revolution, scholars in composition and design accurately predicted the importance of visual literacy in the burgeoning new digital world. In a 1993 presentation "Integrating Visual Literacy Across the Curriculum," Ladislaus M. Semali asked a question that spoke to the importance that visual literacy would have in the coming decade and on into the new century: "As long as our arts and media literacies remain 'unschooled,' do we remain media 'illiterates?'" (215). In the same year, Deborah Curtiss expressed similar concerns about the consequences of leaving visual literacy unschooled in a passage entitled "Visual Ignorance:" "When one considers that from birth a child learns almost entirely through instinctive sensory exploration—through touch, taste, smell, and sound as well as

vision—this sudden neglect, virtual denial of the senses after age five or six, might be an act of violence" (52). As the previous sections of this chapter have expressed, these early calls to media literacies, especially visual literacy, have not gone unanswered. As stated previously, teachers and scholars alike are working diligently to ensure the visual finds a place in the classroom. However, the unequal attention given by teachers to visual and verbal modes of communication remains an issue, and not merely in terms of time allotted to each mode in class. In part, the problem is also one of language.

In "Visual Pragmatism for a Virtual World," Barbara Stafford captures a piece of the problem with visual literacy in the academy. In her consideration of the ramifications of a hyper-connected digital world, she explains that "imaginative adaptation to the information superhighway, even the survival of reflective communication, means casting off vestigial biases automatically coupling printed words to introspective depth and pictures to dumbing down" (209). In other words, English language scholars have long privileged word (especially the written word) over image, and even in a digital age, shadows of that privilege remain, especially in our language about images. Similarly, Gunther Kress raises the possibility of occluding the visual (and other modes of communication): "not everything can be realized in every mode with equal facility, and we cannot transport mode-specific theories from one mode to another without producing severe distortions" (39). Such distortions are visible even in the discourse that surrounds the integration of visual modes into the composition classroom.

Consider, for example, that in the NCTE/IRA Standards for the English Language Arts, the National Council of Teachers of English have included standards such as, "Students read a wide range of print and non-print texts to build an understanding of

texts" (NCTE/IRA Standards). Similarly, *The Little, Brown Handbook* contains a chapter on "Reading and Using Visual Arguments" (Fowler, Aaron, and Marshall 216-227). The language here frames images as textual objects: "students...*read* non-print *texts* [emphasis added]," "*reading* and using visual arguments [emphasis added]." The very title of the widely used textbook *The World Is a Text: Writing, Reading, and Thinking About Visual and Popular Culture* makes the visual subordinate to the verbal. All the world can be boiled down to textual feature. We write and read about images; the text exists over images. Even our discussions and written analyses of images, though scarcely avoidable, may serve to place text above image. Our textbooks (note here even a clinging to text as primary: *text*books) are often careful to separate entries on word and image. Oftentimes, too, books on writing of all sorts break down an image in terms of the verbal messages the writing conveys. The implicit assumption of such practices is that words encompass all that images can do, even if we grant that images can convey some messages in a faster or flashier way. The sphere of verbal influences, such practices tell us, completely encompasses that of the visual.

Charles A. Hill, in an analysis of the state of the visual in college composition classes, speaks to the reasons behind the neglect of visual literacy:

> Perhaps this neglect can be largely attributed to a widespread and traditional dislike and disparagement of mass culture, and from our fears that visual and other modes of communication will overtake, replace, or diminish the importance of the print medium. When most people think of visual media, they think of the 'vast wasteland'... When educators discuss among themselves the role of visual forms of communication (especially

> the culturally dominant, mass-produced forms), it is usually to express and reinforce the worry that students are already too reliant on the visual, in many cases almost to the exclusion of written forms. (109)

The disdain that Hill speaks of might even be visible in the kinds of projects instructors often give to their students under the auspices of multimodal composition as explored above in the Anderson, Atkins, and Ball study, including blogs, websites, print advertisements and the like. These genres are effervescent, often disposable, used and abused by the mass culture that Hill refers too. In a way, the objects that we have selected to represent multimodality gesture toward our community's deep-seated discomfort with images. Stephen Westbrook offers a concrete manifestation of this discomfort through a survey of the texts often used to teach visual rhetoric in the classroom:

> Ten of the more popular textbooks concerned with visual rhetoric—*Beyond Words* (Ruszkiewicz, Anderson, and Friend); *Seeing and Writing 2* (McQuade and McQuade); *Frames of Mind* (DiYanni and Hoy); *Picturing Texts* (Faigley, George, Palchik, and Selfe); *Practices of Looking* (Sturken and Cartwright); *Ways of Reading Words and Images* (Bartholomae and Petrosky); *Everything's an Argument* (Lunsford and Ruszkiewicz); *Reading Culture* (George and Trimbur); *Writing in a Visual Age* (Odell and Katz); and *Designing Writing* (Palmquist)—contain a total of 2,620 prompts, only 143, or roughly 5 percent, require students to engage in multimedia or visual production. (461-2)

The majority of these texts are dedicated to the analysis of images and multimodal compositions, *not* their creation. In creating this divide, the authors undermine their own efforts to incorporate the visual into the realm of composition. In essence, this divide sends students the message that the tools of verbal composition are in and of themselves sufficient to composition.

These examples are in no way intended to be representative of all of the current thinking about visual literacy, but they are meant to show how the privilege of text over image still exerts a powerful influence within composition pedagogy. Visual elements of the text have typically been an afterthought, the finishing touches on mostly complete verbal documents, the trappings that adorn an otherwise self-complete verbal composition. And while the process of composing words is expanded and unpacked, the process of composing images is left mostly unexamined.

1.4 Sketching: A Visible Framework

To summarize, the teaching of multimodal composition has become increasingly important and increasingly a challenge. New ways of sharing information have lead to an accelerating proliferation of new media that increasingly blends visual and verbal elements in the creation of compositions. College students, in the midst of grappling with these new challenges, and with the promise of unforeseen multimodal genres in the future, will need the ability not only to dissect specific genres, but also to develop methods for understanding and creating a wide range of multimodal texts. Furthermore, students of composition deal regularly in their daily lives with many of these multimodal compositions that blend word and image. While some teachers may argue that the kinds

of compositions that students are inundated with are hardly suitable for serious study in the composition classroom, these texts provide a strong foundation from which composition teachers can help students develop their skills in both visual and verbal modes of communication. For these reasons, sketching is positioned to be a valuable ally in truly weaving visual literacy into the composition process, a practice that will in no way replace traditional forms of verbal literacy, but will supplement them in order to address the demands modern writers face. Sketching, as used in this thesis, refers to informal, in-process production of visual designs or images for composition. Crucial to this definition is that the productions of such images be rough, produced amid the messier, early stages of the writing process.

If, as has been argued throughout this chapter, visual rhetoric continues to rise in prominence in multimodal texts, teachers must acknowledge the visual side of composition with as much force as the verbal, or rather, we must acknowledge the ways in which the modes work cooperatively. In Chapter 2, we will begin to unpack exactly what sketching means. We will explore its characteristics, its values, its benefits, and how a philosophy of sketching may provide a handy remedy to the fast-paced, consumerist mindset instilled in students (and in us) by a digital world that has hamstrung our ability to take the time to compose an image.

Chapter 2: Slow Time and Incomplete Images

2.1 The Price of Progress

As discussed in the previous chapter, new media and genres are proliferating at an accelerating rate, each influencing and speeding up the creation of the next. But besides creating a place for a more widely applicable composition framework, this breakneck acceleration has had a real impact on the actual production and consumption of the compositions themselves. The acceleration evident in media is also visible in the speed with which many individual compositions are created.

Many familiar, though relatively new, social media demonstrate this kind of accelerated life cycle. Take again, as an example, Twitter, the microblogging site where each entry can contain only 140 characters including spaces. As of August, 2011, the company reports that Twitter users generate over 200 million of these short messages, or *tweets*, per day ("Your World"). Though this statistic is presented in a company blog post entitled, "Your World, More Connected," it might be better called, "Your World, Faster and Noisier," given the sheer volume of messages that are produced and then permanently forgotten on a daily basis. A study conducted by Pear Analytics determined that an astounding 78% of all tweets fall into just two categories: "Pointless Babble" and "Conversation" ("Twitter Study" 5). The point of these statistics is not to demean the place of phatic communication, but rather to reveal the speed with which these composition objects are created and used up.

Of course, the same characteristic can be found in many other modern multimodal texts. Blog posts, videos, webcomics, and Facebook messages are often created rapidly, then rise and fall in a matter of weeks, days, or even seconds. The widespread

availability of these media paired with the ease of creation can lead to compositions with markedly short life spans. The quickly made, easily distributed genres of the digital age result in poorly thought-out, quickly consumed, and ultimately disposable compositions.

However, short and hugely sharable messages need not be synonymous with inconsequential and disposable messages. The ease with which today's multimodal compositions can be created and distributed digitally has sped up a process that requires time and contemplative thought. Digital composition also unduly hastens the writer by making many of the decisions for the writer, whether explicitly through pre-constructed document templates or implicitly through a range of helpful formatting options that the writer can rapidly click to apply. Think, for example, of the range of pre-generated templates that Microsoft PowerPoint offers the user when constructing a new presentation. Colors, patterns, fonts, animations, and image locations are all provided, the users simply pour in content. Writers need to approach multimodal texts with a somewhat slower mindset than has seemed to develop over the last decade, one that will allow them to take their time, experiment, think, and rethink while constructing blended verbal-visual communications.

Sketching as a composition practice can offer this slower, more contemplative approach to visual composition. For this reason, this chapter will synthesize a philosophy of sketching by looking back through a slower, more methodical perspective, that of the picturesque writers. The picturesque writers not only offer a slower approach to counter the accelerated pace of composition, but they also offer an extended and careful examination of the characteristics and the benefits of sketching, both as an aesthetic style and as a practice. Furthermore, in their arguments for the benefits of sketching, the

picturesque writers were themselves battling a culture becoming overinvested in speed and production.

2.2 Positioning the Picturesque

The idea of the picturesque, formalized and discussed chiefly in the late eighteenth century, may at first seem a strange match for thinking about today's multimodal texts, which appear to be as far flung from the quiet, rugged scenes glorified as picturesque as possible. But the concept of the picturesque offers a valuable approach to composition precisely because of the foil it provides to the typical fast-paced mindset so often applied to modern multimodal compositions. Furthermore, the picturesque writers provide a thorough examination of sketching as a practice and as a way of thinking, and they did so within a cultural environment that, at the time, demeaned sketching as being completely without value, a culture like our own that increasingly demanded speed and production. As will be demonstrated, the culture (and subsequent counterculture movement) just prior to the romantic period bears a number of strikingly close resemblances to modern attitudes toward the visual. This chapter will draw a connection between the Romantic response to the neo-classical movement at the outset of the Industrial Revolution, and a similar struggle today in the midst of our own technological revolution.

The concept of the picturesque, and indeed much of the aesthetics of the Romantic period in general, developed as a reaction against Enlightenment and neo-classical ideals of beauty and art. Parallel to Enlightenment values of rationality, the neo-classical aesthetic was one of unity, symmetry, completion, and perfection. Lord Henry

Home Kames set out to capture this aesthetic sensibility in one enormous tome entitled, *Elements of Criticism*. The book's apparent mission is nothing short of describing the application of taste and the cause of pleasure and displeasure as it pertains to almost every kind of aesthetic object, including language, literature of every kind, history, architecture, and gardening. As a representative example, consider the following passage on historical narrative:

> But the greatest entertainment of the kind is in the history of a single event, supposing it interesting; and the reason is that the facts and circumstances are connected by the strongest of all relations, that of cause and effect: a number of facts that give birth to each other form a delightful train, and we have great mental enjoyment in our progress from beginning to end. (Kames 398)

The passage displays neo-classical attachment both to symmetry and completion. The mind delights, Kames tells us, by perceiving the clear and perfect chain connecting action to reaction. And we must perceive both, as he says, for the enjoyment is also derived from seeing an event in its entirety, "from beginning to end" (398). For Kames, and for the neo-classical ideology of beauty at the cusp of the Industrial Revolution, beauty dwelt only in the final production.

Kames, when considering the place of a subplot in a narrative, explains that "for the sake of variety, we indulge in an underplot that is connected with the principal event, but two unconnected events are a great deformity" (401). He elaborates on the cause of such deformities, saying that "every remarkable deviation from the standard makes accordingly an impression upon us of imperfection, irregularity, or disorder. It is

disagreeable, and raises a painful emotion" (485). Kames's views reveal how an overemphasis on balance, symmetry, and completion leave no room for that which is not, in and of itself, complete. Of course, such a viewpoint fails to acknowledge the inherent nature of a composition, the fact that it is *composite*, crafted from pieces that are incomplete, and that such objects are built up from earlier, incomplete iterations.

Today, we share a similar need for progress and completion common at the time of Kames's writing, a need that is not perhaps entirely healthy. Our need for progress and completion are best captured in a favorite word, one that has seeped into every facet of our lives: *productivity*. Even our leisure time is often measured in terms of productivity, our capacity to create and complete tasks for ourselves. I cannot count the number of times I have heard someone ask a friend how the weekend went and receive an answer relative to productivity, along the lines of, "Good, I felt very productive this weekend," or "I didn't get as much done as I needed to." For most hobbies and leisure activities, there are magazines, blogs, podcasts, and Twitter accounts—endless updates that send the unceasing message that our leisure time is not being spent optimally. Carl Honore writes extensively on our obsessions with speed and ceaseless production: "In this media-drenched, data-rich, channel-surfing, computer-gaming age, we have lost the art of doing nothing, of shutting out the background noise and distractions, of slowing down and simply being alone with our thoughts" (11). Honore's position represents a counter-movement against the dominant ideology of acceleration and productivity, and it closely resembles the response of the picturesque writers against the neo-classical ideals of completion and production. This is not to argue that a composition course should not involve the production of texts and other multimodal objects, but rather that the process

of production itself be slowed down, experienced, and examined. By examining the concepts explored by the picturesque writers, we can discover how they used the slow practice of sketching to counteract the culture of production that they encountered, and we will find tools to bring to the classroom to slow our students down and help them engage in the process of visual creation.

The picturesque writers, in direct opposition to neo-classical notions of beauty, sought to expose and study the incomplete. Richard Payne Knight undertook a project very similar to Kames's treatise on aesthetics, though through the lens of the picturesque, entitled *An Analytical Inquiry Into the Principles of Taste*. In the book, he calls special attention to the subtle oddity of the word *picturesque* itself:

> According to the idiom of the Italian language, by which the meaning of all adjectives ending in *esco* is precisely ascertained, *pittoresco* must mean *after the manner of painters,* whence we may reasonably infer that painting had, at that time, appropriated to itself certain descriptions of objects for representation [emphasis in original]. (148)

Though Knight limits the scope of the etymology to paintings, his analysis is equally applicable to pictures in general, so that the picturesque essentially means *after the manner of pictures*. Or, as Knight continues, we can think of the picturesque as a further abstraction away from a representation. More simply, something that is picturesque is *like a picture*. This simple phrase, *like a picture*, may seem innocuous at first glance, but it has major implications for this aesthetic theory and for sketching as a practice. After all, if a picture is intended to be the likeness of something, what exactly does it mean for something to be *like* a picture?

The answer to this question lies in Knight's many descriptions of picturesque beauty, for example, his description of "trees, whose branches are spread into irregular forms, and exhibit broken and diversified masses of foliage, and whose trunks are varied with mosses and lichens, or enriched with ivy, buildings that are moldering into ruin, whose sharp angles are softened by decay" (68). First note the words that contrast sharply with Kames' neo-classical ideas of beauty—irregular, broken, varied, ruin, decay. All of these lend to the power of the picturesque, and all of them center on the concepts of fragmentation and incompleteness. Herein lies the answer to the question of how a thing can be like a picture. Because picturesque objects are inherently fragmented and incomplete, they only approach a completed image. Of course, the sketch easily fits into the framework of the picturesque, as it too is inherently a fragment, something approaching a finalized image. As Knight and other picturesque writers, such as Uvedale Price and William Gilpin observe, the beauty of fragmented images like sketches is the beauty of possibility and imaginative viewing.

As might be expected from the title, Price's *Essays on the Picturesque, as Compared with the Sublime and the Beautiful* also makes a point of distinguishing the unusual aesthetics of the picturesque from more traditional perspectives. His passage on a natural scene echo Knight's descriptions:

> All water of which the surface is broken, and the motion abrupt and irregular, as universally accords with our ideas of the picturesque, and whenever the word is mentioned, rapid and stony torrents and waterfalls, and waves dashing against rocks, are among the first that present themselves to our imagination. (57)

Here Price reinforces some earlier concepts of the picturesque and of sketches while introducing others. The words *broken*, *abrupt*, and *irregular* clearly hail the same stylistic interest in the fragmented and incomplete as Knight's work. But Price now introduces the concept of time and motion to the sensibilities of the picturesque.

It is no mistake that Price chose water as the premier representation of the picturesque, which in addition to having the properties of irregularity, is also in a state of constant movement and flux. A key feature of the picturesque, and again, of Romantic aestheticism in general, is the idea of ephemerality. From moment to moment, the "stony torrents" that Price describes change, and the image observed at any instant will be modified shortly thereafter. Picturesque images remind the viewer of their own transitory nature. This ease of transition allows the view to become a more active participant in the construction of the image itself.

William Gilpin, in his foundational book on the picturesque, *Three Essays Three Essays: On Picturesque Beauty; On Picturesque Travel; and On Sketching Landscape*, directly links the picturesque to the practice of sketching through the imaginative work accomplished by the creator/viewer. In his instructions on the art of sketching, he demands that "sketches must be examined also by an eye...that can take up the half-formed images as the master leaves them and give them a new creation" (Gilpin 62). Ultimately, Gilpin argues that sketches must intentionally be only half-created so that they can be looked at again and re-imagined. The picturesque and the sketch glorify the incomplete, because by leaving gaps in the image, the observer of the sketch must imaginatively fill in that which cannot be seen. That which has been occluded by the

incompleteness of the sketch gives the creator a chance at a new creation, or, quite literally, a revision.

In total, the picturesque writers set down the core characteristics and the unassuming power of sketching. A sketch resides between concept and image. It is an approximation, or more appropriately, it is the precursor to a finalized image. Because of its transitory nature, the sketch is also by definition ephemeral, and it calls attention to its own temporality. The sketch is visibly rough and unpolished—no one will mistake a sketch for a perfect representation. Finally, the sketch must always be incomplete, forcing the sketcher and/or the viewer to fill in the gaps of what is missing from the sketch.

2.3 The Need for the Incomplete in the Digital Age

Together, the picturesque concepts of the sketch were intended as an aesthetic remedy to an ideology of perfection, completion, and productivity. As suggested earlier in this chapter, we have, in a way, returned to the rational world of completeness and precision of the neo-classical, Industrial era. In a world that runs on a vast system of interconnected computers, information and rigid rules reign supreme. Furthermore, the consumerist culture we dwell in emphasizes the centrality of product and productivity. The era of sharing, social media, and hyper-connectivity has much to offer us, but it also can hamper us in surprising ways.

Jonathan Fish and Stephen Scrivener explored some of these limitations in a study entitled, "Amplifying the Mind's Eye: Sketching and Visual Cognition." The authors were primarily interested in improving visual design programming built to assist

designer, artists, and architects, and in doing so they encountered a number of obstacles that would not have surprised the picturesque authors in the least. The authors define sketching as "the production of untidy images to assist in the development of visual ideas" (Fish and Scrivener 117). Again, though sketching and untidiness are often considered to be nearly synonymous, the importance of that element to sketching should not be understated. Untidiness is core to the identity and value of sketching, and it also contributes to the problem that the authors encountered. They discovered that "existing computer-aided sketching systems fail to assist visual invention as much as they should" (Fish and Scrivener 117). Interested in solving these shortcomings, the authors undertook a study to understand how traditional pencil-and-paper sketching works from a cognitive standpoint:

> Computer systems that fail to represent in their data storage the implicit structure or categorical meaning of an image may force the artists to provide precise or detailed information too early in the creative process. This can lead to premature decisions that are harmful to invention because they limit the ability to discover unexpected or original solutions. (Fish and Scrivener 117)

Essentially, the researchers found the purely rational and information-driven systems of computers have the same limitations as neo-classical concepts, namely that they demand that the artist offer a complete work that allows no room for growth or revision. In effect, what the artist has seen cannot be unseen, and that prematurely completed image preempts other possibilities.

The authors then moved to study the cognitive processes that viewers use when examining a hand-drawn sketch, using Leonardo da Vinci's sketch *Neptune* as their sample. They found that "the multiple contours and confused indeterminacies in Leonardo's sketches elicit mental imagery because automatic mental recognition mechanisms attempt to complete the missing parts and match percepts to memory images" (Fish and Scrivener 119). The key term here, perhaps, is *indeterminacy*. A smooth, completed image is determined, and therefore does not allow the viewer's mental faculties to imaginatively process the image and fill in the missing parts. A sketch, however, is defined by its indeterminacy. It occupies a possibility space that allows the viewer to create multiple creative alternatives to the missing information. Fish and Scrivener explicate the usual practice of professional designers while sketching, explaining that the artist typically "restricts his or her imagery to global structures, or using notes and signs that implicate multiple alternatives" (Fish and Scrivener 117). The marked and purposeful incompleteness of the sketch is what allows the artist (or composer) creative space. Slowing the composing process down, and making visible the ephemeral and fragmentary images will allow the composer to truly re-see their work and create it anew.

Diana George, in "From Analysis to Design: Visual Communication in the Teaching of Writing," points out a similar limiting of visual possibility within the confines of the composition classroom. In general, George remarks on a central problem facing teachers of composition in regards to the blending of visual and verbal modes:

> There remains much confusion over what is meant by *visual communication, visual rhetoric,* or, more simply, *the visual* and where or

> whether it belongs in a composition course. What's more, to the extent that this confusion remains unaddressed, visual and written communication continue to be held in a kind of tension [emphasis in original]. (13)

As has been outlined previously, the tension between visual and verbal modes in composition derives partially from the attitudes we as teachers bring to the classroom, but George goes on to argue that our usual methods for teaching composition might also stand in the way of successfully engaging our students with visual literacy. Tracing the modern pedagogical history of the visual in composition classes from 1950, George writes, "Visuals (be they paintings, films, comic books, or television narratives) were to be studied in the same way as literary texts, as subjects of close analysis—a use of visual that continues throughout the history of writing instruction" (17). According to George, much of the problem with the visual in composition emerges from the ways in which the verbal has historically been taught. In conflating these two modes, however, we close off the visual from our students by only presenting images as already complete artifacts to be studied.

Finally, and most importantly for the current discussion, George points out the ways in which our cultural desire for speedy production can prevent students from acquiring visual literacy fully (or even traditional verbal literacy for that matter). In her study of the presentation of the visual in composition classrooms, George finds that "only rarely does that call [to incorporate the visual] address students as producers as well as consumers or critics of the visual. More rarely does the call acknowledge the visual as much more than attendant to the verbal" (13-14). The overemphasis on the image as a

completed product to be consumed precludes students' ability to partake in the process of generating and revising images. The word *productivity* itself hearkens to a specific moment in composition pedagogy history, the emersion of process theory and its opposition to focusing exclusively on writing as product. In her landmark essay, "Writing as a Mode of Learning," Janet Emig argues that "writing serves learning uniquely because writing as process-and-product possesses a cluster of attributes that correspond uniquely to certain powerful learning strategies" (122). Given this argument, Emig clearly does not seek a dismissal of the concerns of productivity, but she does point to the problem with focusing on it to the exclusion of understanding the processes behind composition. The trouble with this exclusive focus on completion, however, lies in what it overlooks. Attending only to the analysis and "reading" of images needlessly keeps students out of the messiness that is necessary to invention. Instead, all that is visible to the student is the polished, complete work of another, with any trace of the creative process concealed.

Digital media in general has altered the process of composition, and to be sure, many of these alterations are for the better. However, the digital age has can also limit the range of possibilities for creation by forcing writers to make choices too early in the writing process as demonstrated by Jonathan Fish and Stephen Scrivener. Effectively, digital composition of all sorts speeds along production to completion, perhaps too quickly, and limits possibilities rather than supply them. At the same time, our own methods for teaching visual literacy have struggled to keep up and provide opportunities for students to embed themselves in the actual act of creation, as scholars like Diana George and Stephen Westbrook have demonstrated.

We live in a time that, like the Industrial Revolution, has become focused on speed, efficiency, production, and completion, though our revolution has been spurred by digital information rather than an industrial boom. And for the same reasons as in that era, the characteristics of ephemerality, roughness, and incompleteness, the key characteristics of the sketch, have much to offer us. One might object to this argument, claiming that these characteristics—that is, ephemerality, roughness, and incompleteness—already describe the modern age, in particular the multimodal compositions that are the concern of this project. Indeed, much of the argument presented at the beginning of this chapter argued that today's multimodal compositions are quickly manufactured, forming one moment and disappearing into the digital æther the next. But, although such multimodal compositions appear and vanish almost in the same instant, they are *presented as completed products* to be consumed. Even compositions we might not at first think of as products, such as Facebook or Twitter posts are placed before an audience of consumers who carry the currency of "Likes," "Favorites," and "Retweets." Yes, many of these compositions are sketchily made, but they are manufactured and presented as though they are complete. Put simply, these truly incomplete compositions are rushed through to completion.

Again, the aim of this project is not to argue against the production of completed texts—far from it. Rather, the aim of this project is to ask that we acknowledge the value of incompleteness during the early stages of composition. There is a strong tradition in the study of composition and rhetoric to value incompleteness as a tool to writing, which can be extended to the visual as well. In his famous article, "Inventing the University,"

David Bartholomae makes a case that filling in the gaps of incomplete knowledge is a necessary step for learning writers grasping for the authority to speak:

> To speak with authority, student writers have not only to speak in another's voice, but through another's 'code'; and they not only have to do this, they have to speak in the voice and through the codes of those of us with power and wisdom; and they not only have to do this they have to do it before they know what they are doing, before they have a project to participate in and before, at least in terms of our discipline, they have anything to say. (283)

In part, Bartholomae speaks to the enormity of the task placed before student writers, that they are forced to write in ways before they have acquired the language with which to do so. But he also argues that writers must overextend themselves and attempt to fill in the gaps of discourse they have not yet attained in order to grow as writers. In a sense, this kind of overextension improves writing in the same way that exercise builds muscle. Exercise is the process of pushing the body beyond what it is currently capable of, an overreaching that causes muscles to tear and promotes the rapid growth of more muscle tissue. This metaphor, and indeed Bartholomae's argument, can be extended to visual composition as well in the form of sketching. Sketching is, by definition, an incomplete attempt at a visual composition, one that will reveal to students the gaps that they must fill in to finish the piece. As explored in the work of Fish and Scrivener, sketching operates at the cognitive level by forcing the viewer (or creator) to complete the image imaginatively, promoting the kind of reaching that Bartholomae identified as the necessary work of student composition.

Flower and Hayes' cognitive model of the writing process also highlights some of the ways that sketching can be invaluable to visual composition. Much of their model, including "planning," "goal-setting," "the monitor," "reviewing," involve the identification of writing problems, or gaps in the current composition, and attempts at solving them. In fact, Flower and Hayes identify the "keystone of the cognitive process theory" as the process of "writers [creating] a hierarchical network of goals," which they envision as a conversation with the self (377). The keystone of the process then is in locating and understanding the current gaps in the writing. Take, for example, one of the writing protocols of the study:

> (Plan) Ok, first day of class...just jot down a possibility.
>
> (Translate) *Can you imagine what your first day of a college English class will be like?*
>
> (Review) I don't like that sentence, it's lousy—sounds like theme talk.
>
> (Review) Oh Lord—I get closer to it and I get closer—
>
> (Plan) Could play up the sex thing a little bit
>
> (Translate) *When you walk into an English class the first day you'll be interested, you'll be thinking about boys, tasks, and professor—*
>
> (Review) That's banal—that's awful. (376)

Though this self-conversation is all verbal, it is also very sketchy. The writer rapidly identifies a gap in the writing, requiring an angle to approach the topic from. In each of the subsequent attempts at filling this gap, the writer better senses what is needed ("I get closer to it and I get closer"). Just as the protocol helps make tangible these decisions

and the gaps in the current text that they address, a sketch can make visible to students the gaps in their current formulation of the image or design they are trying to create.

The essential incompleteness of a sketch addresses one of the greatest obstacles that writers, especially novice writers, face when writing and revising, the growing text itself. Flower and Hayes also illuminate the problem of the growing text: "As composing proceeds, a new element enters the task environment which places even more constraints upon what the writer can say. Just as a title constrains the content of a paper...each word in the growing text determines and limits the choices of what can come next" (371). Again, the particular weakness of computer-aided visual composition relates to this very phenomenon. Just as each word in a text limits the possibilities of that text, each design choice in the creation of an image limits the possibilities of that image. And since computers require more choices to be made at earlier stages of composition, the possibilities are rapidly closed off, especially for first year writers who often seek to simply complete the project with as little fuss as possible. I suspect also that first year writers strongly resist deep revisions in part because the "rough" draft is designed to appear as complete as possible, and indeed many teachers ask that the "rough" draft of a paper be a complete draft.

The trouble is that, on a fundamental level, *rough* and *complete* are incompatible terms, as demonstrated so thoroughly in the contrast between neo-classical and picturesque aesthetics. Uvedale Price in particular noted "the effect of smoothness or roughness in producing [respectively] the beautiful or the picturesque" (61). The "rough" drafts that first-year composition students turn in lack the essential roughness in appearance that demands revision. The content, the thoughts, and the writing itself might

be a mess, of course, but the physical presentation—neatly typed and formatted, with clean, printed margins and Times New Roman font—tells the student that they have completed the composition. The same point can be made more emphatically over the typical treatment of the visual in the composition classroom, since visual design and rhetoric often only appears in the final completed version of the composition. This is by no means to argue that rough drafts in the classroom should all be visibly rough, handwritten, crossed-out, sketches. Rather, as will be argued here and in the remaining chapters, the sketching philosophy holds its principle value in the very early stages of writing, stages that are too often skipped over rather than experienced and examined. Chapter 4 in particular will investigate the specific classroom practices that can take full advantage of the roughness of sketching.

A philosophy of sketching demands visibly rough images (and visibly rough writing for that matter), not only for the sake of getting messy, and not only for the sake of slowing down for contemplation, though these are indeed noble aims. Still more, a philosophy of sketching demands roughness and incompleteness so that we can see and understand the gaps in the work that we have done, so that we may fill those gaps in imaginatively as we recreate the image again. Having distilled the characteristics of sketching both from the picturesque writers and from modern scholars in composition and design, we will now examine how these characteristics of sketching are already used to great effect across the curriculum in an effort to fold them also into the composition classroom. Sketching holds a place of prominence in biology, mathematics, engineering, architecture, and industrial design, both in business and in academic settings. As will be discussed, these varied disciplines use sketching both practically in the workplace, but

also as a pedagogical tool to help students understand and solve the problems they encounter, which should lead us question—just what have we missed about sketching that all of these disciplines are taking advantage of?

Chapter 3: Word and Image in Cross-Disciplinary Sketching

3.1 Sketching in the "Laboratory"

As we have seen, sketching carries with it many characteristics that make it a valuable tool for composition in general and multimodal composition specifically. First, and most simply, sketching grants students the opportunity to take the reins of production rather than being solely critical consumers of visual media. Second, sketching slows students down in the creative process without forcing them to make decisions that will cut off other avenues of exploration as digitally-mediated drawing does. Sketches lend themselves to being quickly and easily altered, so that the composer's vision of the project can change easily in the early stages. Third, sketched images are inherently fragmentary and incomplete, requiring students to imaginatively fill in the missing portions. Simultaneously, the fragmentary nature of sketches permits students to move beyond mental blocks in design. In other words, sketches encourage students to pass over what they cannot immediately visualize. There is no punishment in a sketch for incompleteness, which can encourage the sketcher to continue developing the image. Fourth, sketches are necessarily rough, and in so being they communicate to students that reworking and revising are not merely beneficial, but also necessary to the revision process. Finally, sketches are ephemeral, temporary constructs. This means that they help students externalize and see the processes of invention, but it also means that there is little at risk in the early stages. Discarding a sketch (or a dozen sketches) is a far easier feat than discarding a completed draft and beginning again.

In total, the characteristics of sketching push students to dive into the work of visual creation, to take chances and explore possible avenues by which to deliver

messages, to start over and learn from mistakes, and to reach their own conclusions through the process of active composition. Put another way, sketches have value as inductive learning tools, allowing students to learn for themselves through the act of doing. Neal Lerner, in his book *The Idea of a Writing Laboratory*, explores possible connections between composition and the pedagogy of science laboratories. Lerner dedicates one chapter in particular to the role of freehand drawing in the teaching of the sciences, what Lerner himself describes as "a key feature of laboratory methods" (126). Lerner's work is valuable not only because it offers fascinating insights into both the place of laboratory methods in our own classrooms and the importance of sketching, but also because his work serves as a model for investigating the ways in which other disciplines have used sketching as a pedagogical tool. After detailing and explicating Lerner's research and conclusions, this chapter will build off of Lerner's work to explore other cross-disciplinary connections and how sketching pervades the fields of science, biology, industrial design, engineering, architecture, and math. Furthermore, and in contrast to Lerner's work, this chapter will reveal how the ways in which these fields use sketching can be adapted to the composition classroom. Each field will contribute another layer to a fuller understanding of what sketches can offer teachers of composition.

3.2 Sketching in Science

Much of Neal Lerner's work in his chapter on drawing in the sciences echoes the findings of this thesis. In his observation of an MIT biology class in which the students were asked to draw pictures of an embryo by hand, Lerner found many students raising

objections similar to the ones addressed here previously: "Invariably, some students complain about this seemingly low-tech and elementary technique. Why can't they take digital photos, they ask, and assemble a slide show? And what is the value in the tedious process of drawing?" (126). Accustomed to speed, freehand sketching seems slow and tedious. Accustomed to technology, sketching seems outdated. Yet as has been discussed, these "drawbacks" conceal a wealth of possibility, as Lerner also details. Or, more appropriately, the "drawbacks" of a slower pace and a step away from the digital world in fact directly open up these possibilities.

Lerner also generalizes the objections raised by the students to the problems faced by modern composition instructors. As has been claimed by this thesis and by the work of many other scholars, he also makes the claim that "in the world of the Internet, the visual reigns supreme...The classroom needs to reflect (and better equip students to deal with) that reality. In these ways, the first-year composition classroom has become an experimental space once again" (Lerner 127). Importantly, students do not merely need the ability to generate the visual and multimodal texts today's culture demands, but rather they need the ability to meet a broader challenge put forward by a world that is becoming increasingly visual.

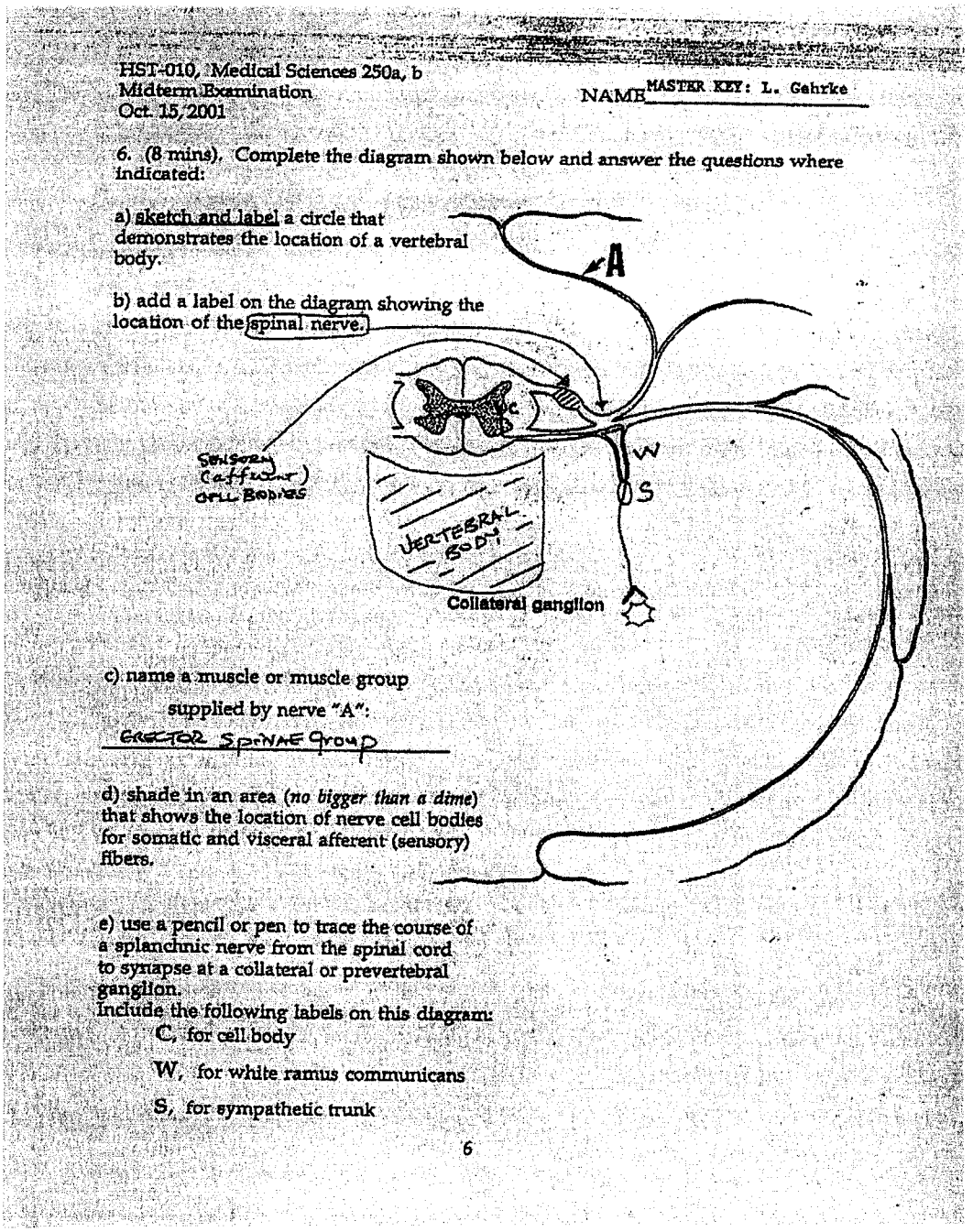
Thinking more explicitly about drawing in the sciences rather than in the composition classroom, Lerner seeks to understand a tension that underlies drawing in the sciences. He uncovers a resistance to drawing for the purposes of inductive learning, not only on the part of students, but also on the part of instructors. Take, for example, one of the sketches from Lerner's study, which appears on an exam (see figure 1, next page). The exam asks the student to sketch, but only in the interest of proving that the student can

reproduce a memorized fact, rather than in the interest of discovery. For Lerner, this kind of "sketching" undermines a more powerful learning effect that drawing in the sciences can produce:

> The task of—and resistance to—drawing to learn science reveals a long-standing tension between the need for students to master a body of scientific facts versus the creation of laboratory environments in which students construct knowledge through social interactions, inductive learning, and opportunities to do the work of real scientists. (127)

Or real composers for that matter. In his examination of the opportunities afforded to science by sketching, Lerner uncovers ways in which sketching can benefit the teaching of composition. After all, composition is mediated through the social construction of knowledge. But most crucial to all of Lerner's work, but especially with respect to drawing, is the inductive impulse behind assignments and activities, that students always "experience firsthand," and by their own hand, the lessons that they learn and the tools for knowledge-building they acquire (129).

The tension perceived in regard to drawing in the science classroom is one that Lerner ultimately views as inherent in the sciences, explaining that "drawing, then, is both to render scientific 'facts' and to help students generalize from these facts, a process concrete and abstract at the same time, the essence of inductive learning" (126). Not only is the process Lerner describes the essence of inductive learning, it is the essence of



HST-010, Medical Sciences 250a, b
Midterm Examination
Oct. 15, 2001

NAME MASTER KEY: L. Gehrke

6. (8 mins). Complete the diagram shown below and answer the questions where indicated:

a) sketch and label a circle that demonstrates the location of a vertebral body.

b) add a label on the diagram showing the location of the spinal nerve.

A

W

S

Collateral ganglion

c) name a muscle or muscle group supplied by nerve "A":

ERECTOR SPINAE GROUP

d) shade in an area (*no bigger than a dime*) that shows the location of nerve cell bodies for somatic and visceral afferent (sensory) fibers.

e) use a pencil or pen to trace the course of a splanchnic nerve from the spinal cord to synapse at a collateral or prevertebral ganglion.
Include the following labels on this diagram:

C, for cell body

W, for white ramus communicans

S, for sympathetic trunk

6

Figure 1. "Midterm examination from Harvard Medical School, HST-010" (Lerner 142). According to Lerner, sketching in the sciences exist in a tension between drawing to learn, and drawing to display content mastery. Examples like the one above highlight how sketching in the sciences can be reduced to forcing students down foregone conclusions.

sketching in particular. Paradoxically, occlusion is an integral part of sketching, as the image must necessarily be incomplete in order to be a sketch. It is this partial occlusion, both of the image and of the sketcher's current knowledge, which drives the process of discovery forward, whether the exploration is one of science or one of composition.

This tension is visible in other works of science pedagogy specifically aimed at the purpose of sketching, such as Lorie Topinka and Diane T. Sands' "Sketching as a Science Tool." Among the chief purposes of sketching in science, according to Topinka and Sands, is the ability to render understanding "measureable" in such a way that "can be tracked to benefit both students and teachers" (4). In other words, it accomplishes the lesser goal delineated by Learner, namely to prove a "correct" understanding in line with that of the instructor. Put another way by Topinka and Sands, "by making connections on the pages of a sketchbook, scientists link observation and memory" (4). However, it would be a mistake to completely write off this purpose as put forward by the authors. Certainly the purpose here is a straightforward attempt at reifying a student's mastery of a number of facts, but Topinka and Sands do reveal the way in which sketching externalizes and crystallizes current understanding. By externalizing his or her understanding of the subject at hand, both the student and teacher can work to fill in gaps in knowledge.

Yet the work of Topinka and Sands does indeed address the higher order purpose of sketching that Lerner discusses. The authors observe first that "the act of sketching most often requires longer observation of a subject or object than students who are not sketching are willing to do" (Topinka and Sands 5). Not only does sketching necessitate a slower, more careful approach at the object being sketched, it invokes in students a

willingness to persist. This slow approach allows students to perceive connections they might otherwise have missed and allows for self-correction. Furthermore, the authors "advocate the use of sketching not only to enhance observation, but also to develop the questioning mindset that is part of scientific inquiry" (Topinka and Sands 6). Saying that a questioning mindset is simply "part" of scientific inquiry may be something of an understatement, one that applies equally well to the field of composition. We can use sketching in the composition classroom to instill a questioning mindset in regard to compositions, textual or otherwise. More specifically, we can use sketching as a tool to help students understand how a multimodal text functions, much as scientific sketches investigate subjects such as animal biology.

To see this kind of questioning mindset in action, examine figure 2 (next page), which depicts a third-grader's sketch comparing herbivore and carnivore teeth in an effort to connect the form and function of the teeth. The work exhibited in this fairly complex sketch indicates not only the questioning mind teachers seek to instill in their students, but it also demonstrates the power of the sketch as a medium for such interrogation. Certainly the sketch reveals ways in which the student seeks to demonstrate mastery over the content, by labeling many of the parts of the jaw structure with words acquired in the classroom. However, this labeling and classification is part of a larger scheme of knowledge-building, in which the student commits to paper what is already known in an attempt to uncover gaps in current understanding. The *known* in the sketch has been packed tightly along the pictorial representations of the jaw in the form of labels, while

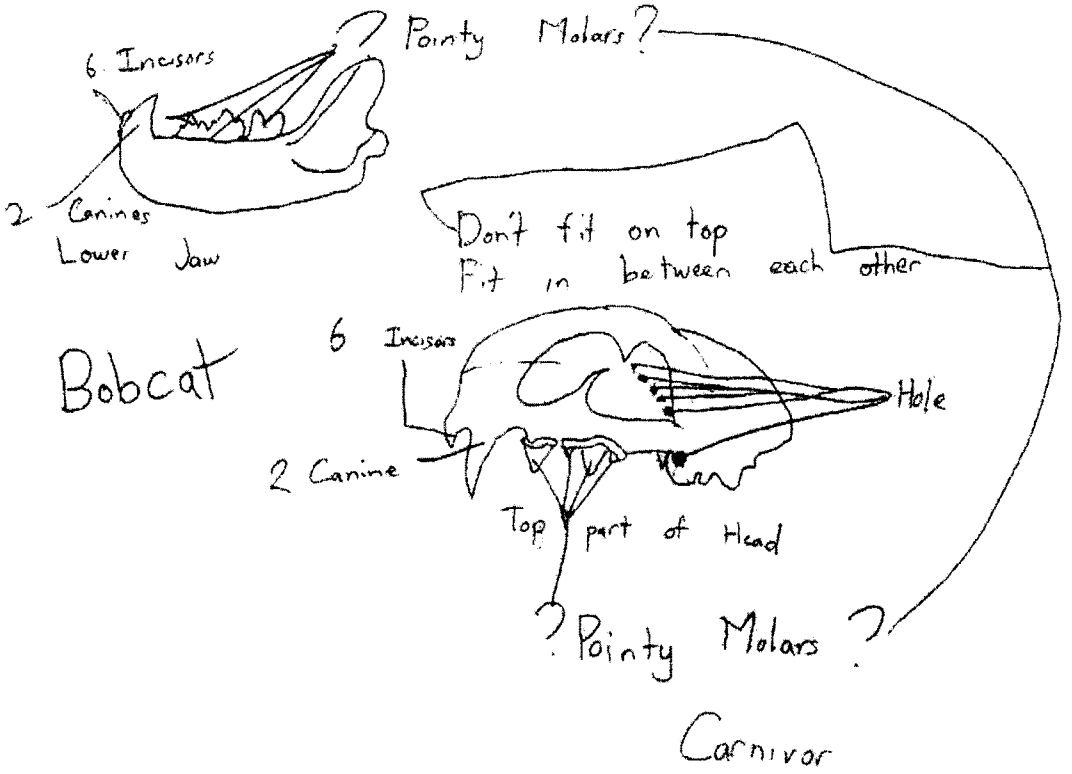


Figure 2. "In an elementary class studying the differences between herbivores and carnivores and the relationship between the structure and function of their teeth, one third-grader made very careful observations that are nicely revealed by the sketch, question, and comment" (Topinka and Sands 6). Additionally, this sketch begins a pattern observed in many of the remaining sketches of this chapter, whereby image and words cohabitate the sketch, working together to construct knowledge. Here, words are used both to label and classify, but also to highlight the current gap in knowledge and to attempt to fill that gap.

the space farther out from the representations houses the *unknowns* and allows space for conjecture.

Furthermore, though neither Lerner nor Topinka and Sands discuss this final feature, this sketch and many others that will be discussed, fuse image and word in order to construct meaning. In this image in particular, the "blanks" of the page, and indeed the blanks in the student's understanding, are filled with words, questions that will guide the student in further investigation and discovery.

3.3 Sketching in Engineering and Mathematics

As might be expected in the field of engineering, sketching in engineering deviates from that of the sciences in that it is concerned more with the solutions to problems rather than in the understanding and detailing of underlying rules and systems. As engineering scholars Pierre Sachse, Winfried Hacker, and Sven Leinert frame it, sketching in engineering is essentially an "external problem representation" (415). Sketching represents a route to a more complete solution, a necessary starting point to the most effective remedy to a problem. Interested in how engineers use and benefit from sketching, Sachse, Hacker, and Leinert took a cognitive approach to better understand the process of sketching, and how it fits into the larger process of problem-solving that is core to the engineer's purpose.

However, in the interest of using sketching as a pedagogical tool for teaching novice engineer students, the authors took a special interest in the inherent properties of sketching to influence cognition, rather than how only expert engineers use them. Their method was to test students from many departments across a university. Individual test subjects would observe a mechanical system with the goal of understanding the interaction between components and later recalling individual components that made up the system. Half of the test subjects were asked to sketch the system with pencil and paper during the observation period, while the other half were not permitted to sketch.

Among the findings of the study, the researchers discovered that sketching the system conferred "a reduction in the perceived difficulty of the problems and an increase in the likelihood of correctly inferring relations between the components" (Sachse et al.

415). Confronted with a problem, people perceive the problem as easier to solve and in fact solve it with greater accuracy. Sketching, in other words, requires the sketcher to make connections and bridge gaps in knowledge, a trait that can be easily adapted in order to solve visual rhetorical problems. In related research aimed specifically at engineers, the researchers found that "making manual paper-and-pencil sketching whilst doing CAD [Computer Assisted Drawing] work corresponds with a significant decrease in the total number of working steps in design problem solving due to the decrease in repeating, correcting, and testing operations," as well as "a significantly improved quality of the solution" (415). All told, sketching was found to make the stated goals of a project more attainable, due in part to the rapid trial-and-error made possible through sketching. Sketching actually simplified engineering designs, due to the ability to revise and revamp during the early stages when little has been invested into a particular model of solution. Finally, and similarly, sketching was shown to produce more effective solutions in general. Essentially, these findings reveal how sketching works as a process approach to visual design and composition.

While Sachse, Hacker, and Leinert reveal a connection between sketching and the quality of a solution to a problem, a second study by Maria C. Yang seeks to more explicitly delineate the mechanism by which sketching enables a better solution. More specifically, Yang's study focused "on measuring a single aspect of the brainstorming process through one of its main guidelines: generate as many ideas as possible. By broadening the initial pool of ideas, the assumption is 'quantity yields quality'" (1). In her attempt to test this hypothesis, Yang followed classes of engineering students over the

course of design projects in which the students were required to keep a log of the sketches they created for the project.

Confirming and expanding the findings of Sachse, Hacker, and Leinert, Yang found first that "the quantity of concepts generated at the beginning of a design project correlates with design outcomes," and second, that "increased sketching at the beginning of the project, rather than at the end, correlates with better design outcomes" (6-7). Taken together, Yang's results reaffirm sketching as an ideal engine during the invention stage of a project, whereby ideas can be quickly produced, revised, or discarded as need requires.

As with sketching in the sciences, this particular study has much more to reveal about sketching and its ability to aid cognition, as seen in a number of the sketches documented in the study. Figure 3 (next page) juxtaposes initial sketched concepts with finalized project models. In these early sketches, Yang notes the prevalence of "primarily line drawings with limited annotation and sometimes shading"—there are no dimensions in these early concepts, few straight lines, and again, words are allowed to temporarily hold the place of missing information. Figure 4 (next page), on the other hand, highlights the difference between early- and late-stage sketching, or as Yang labels them, "thinking" and "prescriptive" sketching (5). "Thinking" sketches tend to be directed toward the self, tend to be less tidy and with fewer labels, and are critical to "generating concept" (Yang 2). Furthermore, these more simplistic sketches can serves as "a way to mentally offload concepts" (Yang 2). The ease of production of the sketch, combined with the freedom to draw only the details necessary to capture the concept, allow the sketch to be a valuable tool of self-communication. Ideas are externalized,

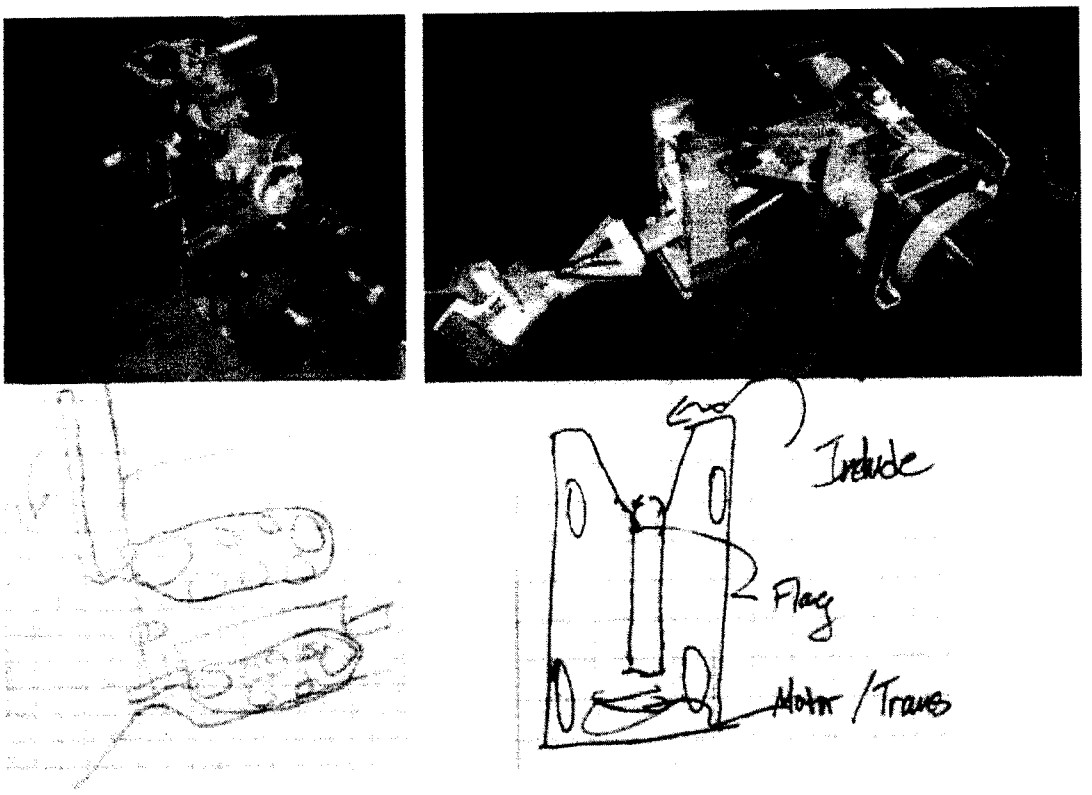


Figure 3. "Electromechanical design projects from the advanced design course...Below each photo is a sample sketch from the logbooks kept for each project" (Yang 3). Notice first the lack of detail in the early-stage concepts, allowing room for the project to take shape. Also, in the second sketch, words are allowed to be place-holders where information is incomplete.

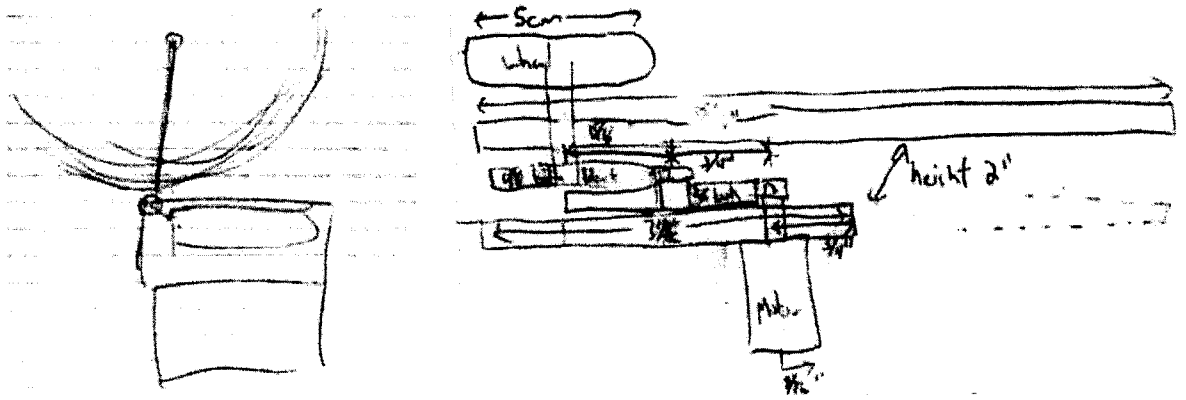


Figure 4. "Example 'thinking' sketch, Level 1 detail from logbook (left). Example 'prescriptive' sketch with Level 2 dimension details on right" (Yang 5). The sketch at left is indicative of early-stage concept generation and offloading.

allowing the sketcher to generate a number of possible solutions and select the best option. Essentially, the sketchiness of the drawing (the lack of formalized detail) opens more possibilities to the sketcher.

Externalization also plays a crucial role in an article on math pedagogy, though the target student demographic differs greatly. Tracey Smith and Amy McDonald's "Time for Talk: The Drawing-Telling Process" explores the use of sketches to monitor and encourage primary school students to learn about clocks and telling time. Though the topic of the article is somewhat narrow, its implications for the use of sketching in the composition classroom are wide, and it reinforces the studies conducted on sketching and engineering. Figure 5 (next page) displays the results of three students' responses to a prompt to simply draw a picture of a clock. The first two images, each from a different student, quickly communicate varying levels of understanding. Again, as with the sciences, this allows for instructors to monitor student mastery of key concepts.

However, the second two images reveal something more useful for composition instructors. Both of the bottom two images were drawn by the same student. The first attempt, to the left, depicts a clock with a fairly sophisticated understanding of the features of a clock—the shape, the hour and minute hands, the numbers one through twelve. However, missing from the original drawing is an understanding of the importance of the position of the number around the circumference of the clock. The second sketch was drawn when the student was allowed to compare her first sketch with an actual clock, prompting her to revise. As the authors conclude, sketches can be used more powerfully when they allow students to "learn from the process of doing" rather than "recall known facts or reproduce a skill" (Smith and McDonald 24). Unique to this

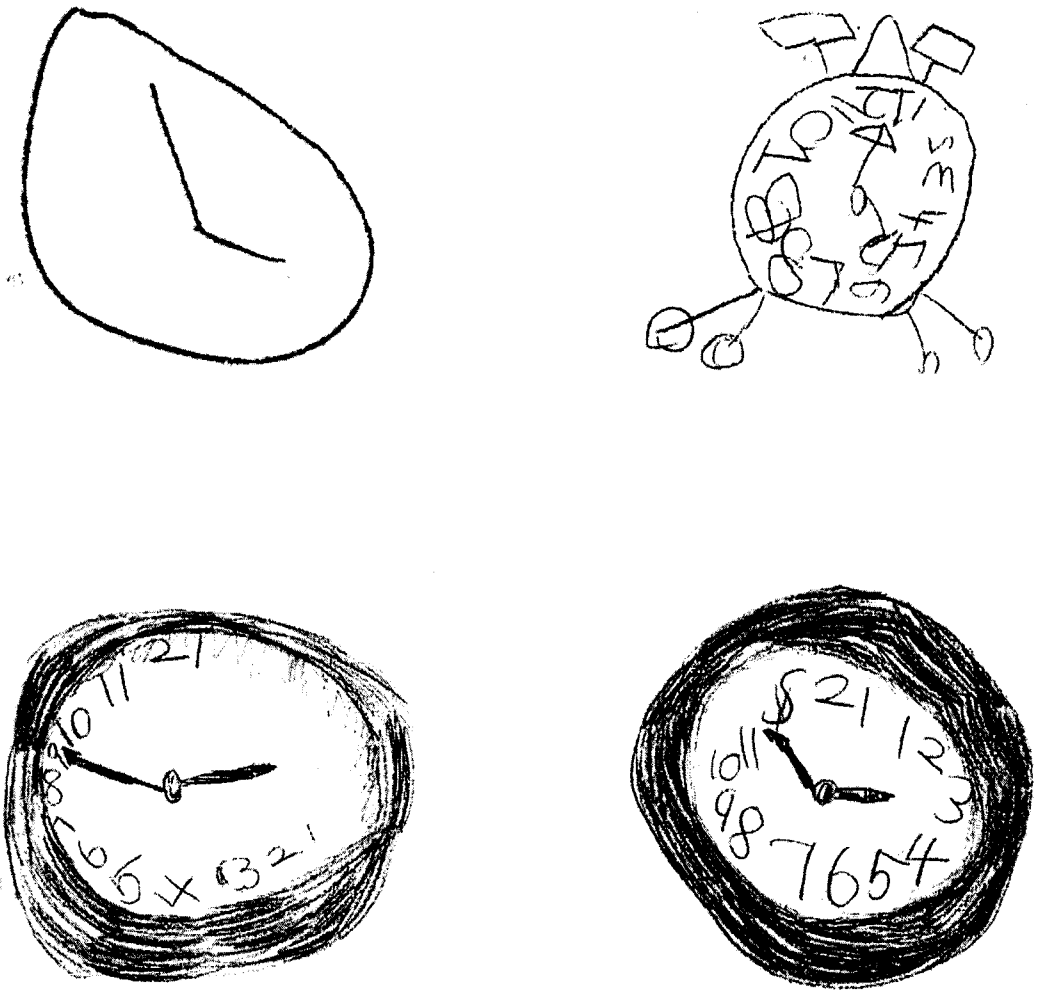


Figure 5. "Eliciting students' drawings or work samples is one established way of representing internal understanding externally" (Smith and McDonald 24-25). The first two images in this series depict two students' responses to a prompt to draw a picture of a clock, each revealing a different level of internal understanding. Perhaps of greater interest to this study, the second two images show a student's attempt to draw a clock, followed by a second attempt after being allowed to compare the sketch to the real thing. Externalizing an internal understanding promotes the student to revise.

study, the sketches of the revised clock reveal the way in which sketching readily "allows students to self-correct" (Smith and McDonald 26). In other words, when presented

correctly, sketching can be a powerful tool for revision, one which motivates the student to adapt rather than coercing the student to reach a predestined conclusion.

3.4 Sketching in Architecture and Industrial Design

As has been gestured through a number of the previous disciplines examined, and as will become apparent in the study of sketching in architecture, many disciplines view sketching not as a means of slowing down, but as a means of increasing efficiency overall. More time spent in the initial stages of sketching equates to a more efficient and effective solution overall. Perhaps counter-intuitively, scholars of architecture tend to praise sketching for its "speed." For example, Hanan A. Kivett notes that while "we are certainly well-versed on the new electronic age and our ability to generate virtual reality images...the cost and the time it takes to produce these images are effective only if the designs are relatively set by planners and architects so that the technician can develop them remotely" (60). Kivett draws a clear line between the sketches that drive the initial creative process and the cleanly rendered computer-assisted drawings of the finalized project, and the benefits of sketching during the early stages are overwhelming:

> •Communications [with fellow architects, technicians] are almost instantaneous.
>
> •A minimum amount of time is required to produce the images.
>
> •Changes can be made on the spot, prior to developing the recommended concepts for implementation. (64)

Kivett found that sketching in the early stages ultimately saves time, money, and effort. In the end, the ease with which sketches can be modified makes them perfect for the

generation and revision of ideas, which again makes sketching a valuable tool in the early stages of composition.

Gabriela Goldschmidt, in "The Dialectics of Sketching," unpacks sketching as a time-honored and tested method in architecture. In the field, "the practice of sketching is universal and dates back hundreds of years (ever since paper became a readily available commodity toward the end of the 15th century)" (Goldschmidt 123). While Goldschmidt takes a stance similar to Kivett's in that sketching plays a foundational role in the early stages of an architectural project, she teases out more of the process. Vital to the sketching process, according to Goldschmidt, are "experimentation and transformation" (125). Designing in the early stages entails more than simply the proliferation of concepts (though that does serve a key role as described previously), it encompasses "generating, transforming, and refining images of different aspects of that still non-existent artifact and making representations of it which enable communication and examination of the ideas involved" (Goldschmidt 125). In figure 6 (next page), the architect generates in succession a concept for a library and two transformations of the original, with the entry to the library serving as the guiding change. Notice, however, that each iteration shows a markedly different internal and external structure, indicating that the change in entry on the sketch has provided the architect with insight into how the simple change will massively change the design of the entire library. In the early stages, when stakes are low, fundamental revision is more easily affected. Similarly, sketching in the early stages of composition will allow students to experiment with and transform their work when the overall composition is less set and more mutable. Sketching can

affect fundamental revision that will change the course of the composition without asking students to rework (what they believe to be) an already finished product.

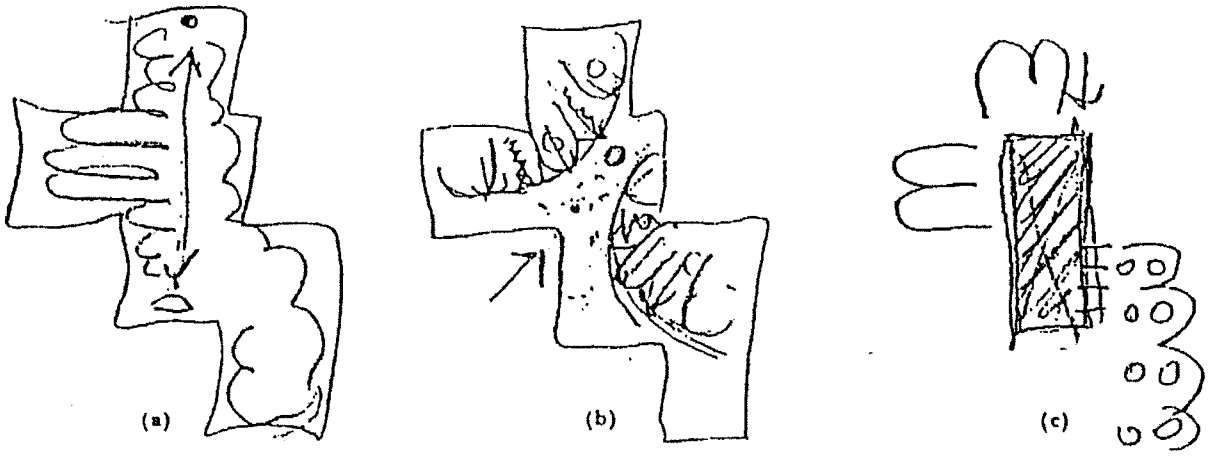


Figure 6. "Alternative library plans using different entry points: (a) long entry hall between reading rooms and stacks, (b) open plan with interior court, and (c) library elements surrounding atrium" (Goldschmidt 134). Importantly, the rapidity of sketching allows for multiple possible solutions to be considered non-linearly.

In a closer look at the relationship between sketches and revision in architecture, Sema Soygenis, Murat Soygenis, and Emine Erktin note that "in the first stages of design, sketching may be like brainstorming where different ideas are recorded randomly. As the ideas become more crystallized, it becomes a continuous process where each sketch produces the next" (284). To get an idea of what this kind of self-feeding revision looks like, see figure 7 (next page). In a study conducted by Soygenis, Soygenis, and Erktin, students were asked to pair visual and verbal modes in the creation of drawings. For this drawing in particular, students first constructed a brief text intended to evoke the word "splendor" before constructing an image that would do the same. Across each of the sketches to the left, the concept experiences slight revision, and each subsequent sketch fills in a little more information on what the completed sketch will look like.

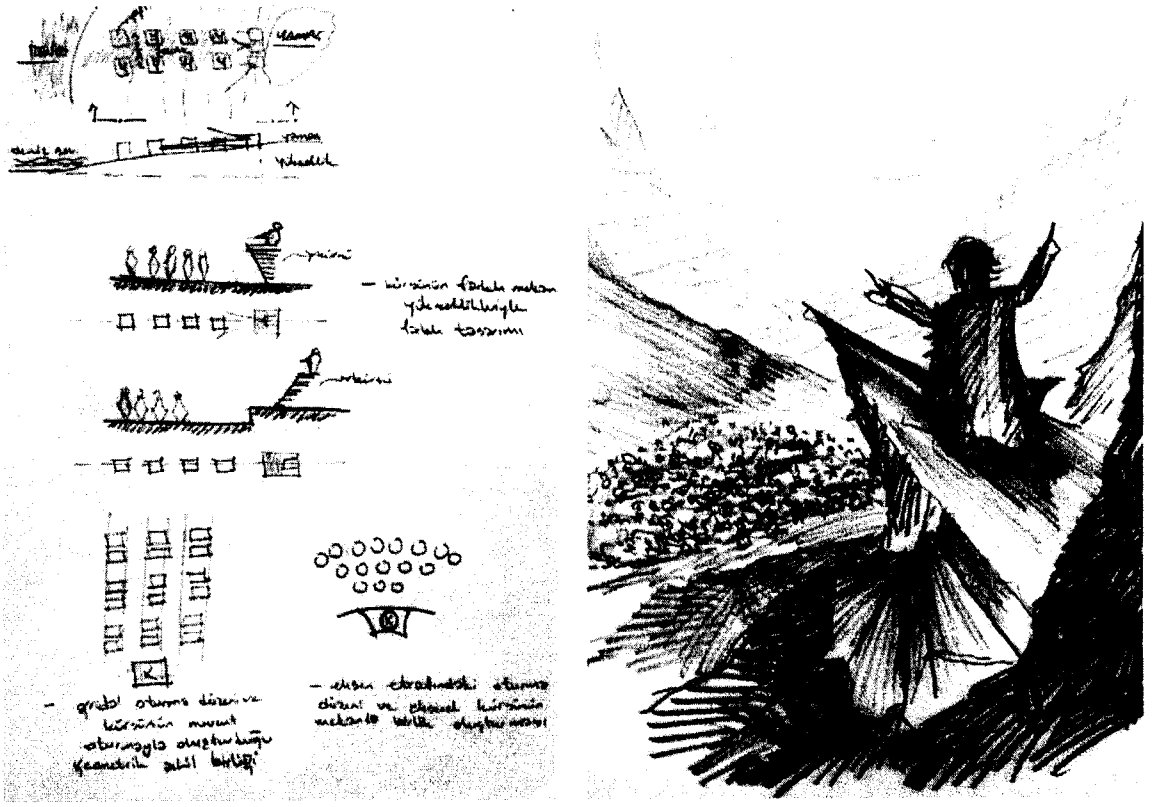


Figure 7. "In the second task students were asked to write a text elaborating on the word 'splendor', then to make a sketch depicting what they have written for this word" (Soygenis et al. 288). This series of sketches (leading to the picture at right), builds information over time, each subsequent sketch altering or filling in the previous sketches.

The authors identify this process as a means of "self-communication" (Soygenis, Soygenis, and Erktin 284). Each sketch is an externalization of the current concept, allowing the sketcher to enact a conversation with the self, examining, critiquing, and modifying each iteration, filling in more information with each pass. Interviews with students make this self-communicative process abundantly clear:

> I read all the criteria and concentrated on the one which I found to be the most important and visualized it in my mind and started to draw each idea. The details came later as improvisations according to many previous

> experiences...In the second and third sketches I started with the abstract. Composition is formed by interpreting this abstract concept. As I draw one line the others follow from that. (290)

The student walks through the process by which information is poured onto the page to be taken back in and modified. Step-by-step, the student identifies where gaps in the total structure exist, subsequently completing the incomplete.

Diarmaid Land, Niall Seery, and Seamus Gordon, approaching this concept of self-communicative revision through the lens of industrial design, arrive at similar conclusions. Sketching, according to the authors, can be understood "not only as an activity that enables the communication of visual imagery, but also provides the inverse as a feedback mechanism for the unlocking, reconfiguration, and synthesis of ideas" (Land, Seery, and Gordon 71). Schematically, the authors locate the cognitive process of sketching as medium between observation and imagination, positioning sketching as "a sense-making tool which supports the synthesis of visual imagery" (Land, Seery, and Gordon 71). Sketching provides a crucial stopping point between the moments of invention and elaboration, a chance to slow down and examine the as of yet non-existent image. Committing the image to paper offers the creator a chance to observe, evaluate, and if need be, modify the image produced by the imagination. Put another way by Juan Carlos Briede Westermeyer and Bernabe Hernandis Ortuno, authors of "New Methods in Design Education," "design uses representations or illustrations as a way by which ideas turn into something real or become somehow 'physical and material' to be seen assessed, shared, corrected, improved and changed. The sketch under this context becomes a means of expressing the creative process" (Westermeyer and Ortuno 121). Pushed

further, the sketch becomes a way of manifesting the creative process, of giving form to the idea while leaving it mutable enough to be sculpted.

The physicality of the sketch, or the roughness of the sketch as described in the previous chapter, plays a key role in design. Westermeyer and Ortuno demand a "physical and material" expression of the concept, as do Howard G. Denton and P. John Williams, who likewise posit that "if initial ideas can be crystallized into forms which can be manipulated, the process of design can be more effective" (16). However, the physical attributes of the sketch itself also have a role to play in the value of the sketch. Denton and Williams argue that "slow laborious drawings at this [early] stage inhibit the range of initial ideas and so limit the potential for continued creative flow. At this stage, drawings should be fast and contain only enough detail to convey the idea behind them, enabling more exploration" (19). Ultimately, the authors make the argument that the illustration should be purposefully sketchy (see figure 8, next page).

3.5 Sketching Across the Curriculum

Taken together, these varying fields have explored the uses of sketching, capitalizing on each of its virtues in turn, and revealing how we might use sketching for the purposes of composition. As discussed by Lerner and Topinka and Sands, teachers can use sketching to promote inductive learning through firsthand observation and experience. In the composition classroom, students can use sketching as a means to observe and question multimodal compositions. Furthermore, as Lerner states, sketching allows students to do "real" work, and while Lerner referred to the real work of scientists, sketching can just as easily allow students to do the real work of composers, gaining

firsthand experience in visual composition. In engineering and industrial design, sketching is used primarily as a problem-solving tool. Sachse, Hacker, and Leinert focused on freehand sketching as a way to externalize a problem in order to

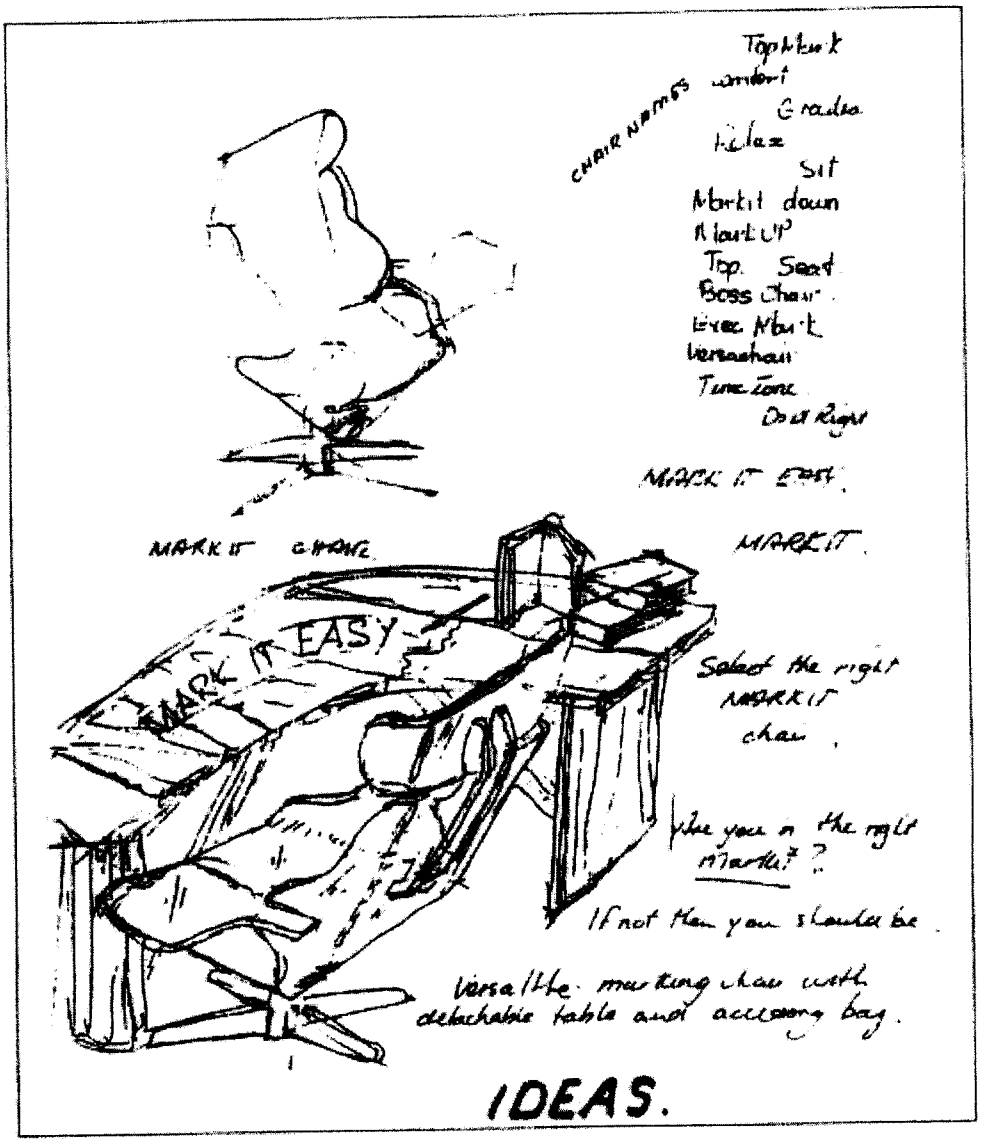


Figure 8. "The student has used quick sketching techniques to explore ideas as well as record the development in thinking" (Denton and Williams 19). The roughness of a sketch, another inherent quality, prevents the artist from locking in ideas too early in the invention stage.

analyze it, while Yang used sketching to proliferate many possible solutions during the invention stages and to mentally offload ideas in order to free up the creative process.

To translate these findings to composition, sketching can be used both as a means to understand a rhetorical problem or situation and also to proliferate possible visual or multimodal solutions to the problem. Students can sketch a wide range of possible designs for a project in order to arrive at the best possible solution. Slowing down in the early stages to explore many possibilities ultimately will yield the most effective design, as Yang concluded in her study, and we can expect the same will be true for visual and multimodal composition. Finally, the scholars of architecture found that the apparent slowness of sketching actually lends to greater overall efficiency and actually saves time in the overall project. Kivett also praised sketching both as a medium for rapid communication between the individuals at work on a project as well as an easily adaptable method of concept externalization that can be modified as needed on the fly. Similarly, Goldschmidt as well as Soygenis, Soygenis, and Erktin discuss sketching as a ready tool for experimentation and self-communication, allowing the sketcher to play with ideas before they become crystalized. Composition teachers can similarly use sketching to allow students to examine their own mental images and visual concepts in order to question and refine their ideas.

Many of the uses of sketching across the curriculum offer straightforward parallels that can be readily adapted to the classroom. Each discipline has investigated the use of sketching as a valuable tool in the stages of invention, one that allows creators to simultaneously explore multiple possible solutions and follow the implications of each. Engineering and industrial design make use of the process of externalization and self-

communicative revision, which can motivate students to revise their own work from the outset, indeed to integrate revision into the writing process from the outset. Armed with this range of pedagogical tools from across the curriculum, we can construct specific practices that will implement the advantages of sketching in the composition classroom. Chapter 4 will detail a number of possible specific composition classroom practices and activities that use sketching as a tool for invention, discovery, inductive learning, and ultimately to improve our student's ability to compose. These activities will include brainstorming activities for problem/solution papers, drawn records of the visual composition process, and analyses of multimodal compositions through drawing.

Chapter 4: Making a Mark in the Classroom

4.1 "Interpreting the Abstract"

The disciplines reviewed in the previous chapter (biology, botany, engineering, architecture, mathematics, and design) all recognize the value of sketching as a medium through which students can learn, construct meaning, and solve problems. Composition as a field, of course, is not without proponents of sketching as an ally for teaching visual and multimodal compositions. Neal Lerner, as discussed in the previous chapter, extrapolates from drawing in the sciences the potential value of drawing in the composition classroom. In particular, Lerner argues that the act of visual representation is a powerful inductive tool, one that allows students to experience the actual demands of visual composition and requires them to adapt their approaches accordingly (126, 145). Anne Wysocki, in her book, *Opening New Media to Writing: Openings and Justifications*, also draws a distinction between the analysis and production of multimedia, arguing that these new media must be "opened up" for students to create and experience (5). In a similar way, scholars such as Diana George and Stephen Westbrook explore the potential for students to perceive and push against dominant ideologies through the construction of visual compositions rather than through consumption (even critical consumption).

Though these and other scholars advocate for the production of visual and multimodal compositions by students in the composition classroom, few offer a practical way for teachers to integrate multimodal production into the classroom, and fewer still provide concrete practices and assignments that incorporate drawing or sketching into the composition classroom. Again, Neal Lerner offers the most direct connection between

drawing and composition, yet his work serves primarily as an indictment against using drawing merely as a means to prove content mastery, and a call for teachers to use drawing as a tool of inductive learning for visual composition. This chapter will provide an answer to this call, detailing specific sketching practices, activities, and assignments that composition teachers can pull into the classroom directly.

Building from the groundwork of the first three chapters of this thesis, this final chapter will translate the attributes and advantages of sketching into the daily activity of the first-year composition classroom. To begin to understand the impact sketching can have in the classroom itself, reconsider the report of a student who took part in Sema Soygenis, Murat Soygenis, and Emine Erktin's study into the relation between drawing and writing in student composition:

> I read all the criteria and concentrated on the one which I found to be the most important and visualized it in my mind and started to draw each idea. The details came later as improvisations according to many previous experiences...In the second and third sketches I started with the abstract. Composition is formed by interpreting this abstract concept. As I draw one line the others follow from that. (290)

Especially interesting in this self-description of the design and composition process is the claim that "composition is formed by interpreting this abstract concept." Fundamentally, the student understands sketching a composition as an act of interpretation, an act of translation from the abstract to the concrete. Importantly, the student explains that the act of sketching takes the sketcher in directions she cannot predict since each line in the sketch proffers insight into the direction the composition can go: "As I draw one line the

others follow from that" (Soygenis et al. 290). And as with the process of translating a text from one language to another, translating from the abstract to the concrete through sketching is a creative process. In the act of translating concepts from the mind to the page through sketching, the composer confronts both the gaps in the forming image and its possibilities. Sketching is the location where such translation can occur.

A different student who participated in the same study also speaks to sketching as translation: "I later added more details to the drawing because I missed some issues while I was writing. I wanted to focus on my feelings when I was going to make a sketch on 'splendour.' I preferred to think about the concept rather than the drawing. I started to draw...It just happened" (Soygenis et. al 291). Here, the student explicitly conceives sketching as a tool for identifying and filling in the incomplete in a composition. Furthermore, this student's comments echo those of the first student in that the slow and careful *experience* of sketching directly causes this kind of elaboration. Notice the parallel between the first student's comment, "As I draw one line the others follow from that," and the second, "I started to draw...It just happened" (Soygenis et. al 290, 291). Sketching as an interpretation from the abstract to the concrete is not merely a powerful tool for visualization, it also demands that students analyze and elaborate upon their concepts for visual composition. With these experiences in mind, this chapter will provide spaces for students to translate the images they hold in their mind to paper in order to test them, experiment with them, and improve upon them.

4.2 Classroom Practice: Sketchbook

Several of the practices that will be suggested to incorporate sketching into the composition classroom cannot necessarily stand on their own as activities or assignments, but rather they supplement the curriculum. This is fitting not only because these general classroom practices can be readily appended to a teacher's already existing plans for the classroom, but also because sketching itself is best suited to the formative stages of the writing process. Because sketching best serves students as a means to externalize and critique abstract images during invention, it often works best as an early step that gears up to a larger assignment or activity, or as a tool to help students brainstorm and refine ideas.

As first discussed in chapter 2's consideration of the writings of picturesque author William Gilpin, one of the chief benefits of sketching is that it externalizes images in the mind and allows the sketcher to examine and reshape them: "sketches must be examined also by an eye...that can take up the half-formed images as the master leaves them and give them a new creation" (62). This principle of sketching is reinforced pedagogically by a number of the cross-curricular studies examined in the previous chapter. In engineering, Pierre Sachse, Winfried Hacker, and Sven Leinert emphasize freehand sketching as a tool for "external problem representation" (415). Sketching serves a similar purpose in the study conducted by Maria C. Yang, in which students kept logbooks that contained all of their sketches and notes on their electromechanical design projects from throughout the design process, a practice Yang encourages as a material record of thinking and design (4). Yang notices also that while she did not prescribe to the students of the study how to use the logbooks, virtually all of the sketches that students created in the logbooks were "thinking" rather than "prescriptive," meaning that

the sketches were a means to arriving at and refining ideas rather than as hard, dimensioned tools for the construction of a completed project (5). All told, these studies underline the function of sketching as a tool for externalizing possible solutions to a problem.

Composition instructors can easily integrate this practice into the classroom by asking students to maintain a sketchbook as they work on multimodal assignments that incorporate the visual mode. Instructors need not change their multimodal assignments—as was discussed in the first chapter, this thesis does not dispute that students need to construct specific multimodal and visual compositions. Rather, maintaining a sketchbook not only provides students with a tool that will aid them in the assignment at hand, but it also provides them a tool they can transfer to other sorts of multimodal compositions. Furthermore, by requiring students to create a material record of the visual composition process, teachers can afford students the opportunity to make a metacognitive examination in retrospect of the process of creation. Students can look back on their sketches in order to understand how their ideas took shape and evolved. Looking back at the gradual, often messy process of composition, students will gain insight into the idea that successful compositions emerge not from a neat, linear process, but from a recursive, messy one.

In the context of a visually-minded assignment, students would be asked to use the sketchbook as a means to log initial concepts, to offload ideas, and to critically evaluate and refine possible solutions to rhetorical problems. Furthermore, students will use their sketchbooks as a way to communicate their visual ideas to each other (especially

in group projects), but also to themselves and to the teacher, who can examine the sketches in order to offer feedback as students sketch.

Some teachers might object to this practice as an additional step in the already lengthy process of composition in the classroom, and despite its potential benefits, it simply cannot fit into the classroom. However, as discussed in the previous chapter, freehand sketching implemented in the early stages of design ultimately saves time and results in more effective solutions (Goldschmidt, Kivett, Land, Seery, and Gordon). Maintaining a sketchbook in the composition classroom as an aid in teaching multimodal composition, therefore, may lead to improved visual compositions without requiring additional time on the part of teacher or student.

4.3 Classroom Practice: Predrawing

Nearly synonymous with the process movement, prewriting still has an enormous presence in the composition classroom. A process scholar of particular note, Maxine Hairston wrote extensively on the problems with "traditional perspective and product-centered paradigm," calling for a strong emphasis as writing as discovery, and the planning and prewriting stages (80). And while we may (or may not) be teaching in the post-process era, the concept of prewriting still holds sway in the field, both in classroom practices and in scholarly research. In 2003, Kerry P. Holmes wrote an article calling for "explicit prewriting instruction," detailing specific strategies teachers can employ to guide students through "the struggle that all writers go through" (242). More recently, in 2008, a team of composition researchers found that "even in settings where no one would explicitly claim to embrace a 'process pedagogy,' classrooms exhibit some of its

markers: students and teachers use words like 'drafts,' 'prewriting,' and 'revision' in commonplace speech" (Whitney et. al 202). For verbal composition, then, prewriting has been established as an invaluable stage in the writing process.

Visual or multimodal composition can surely benefit from an analogous pre*drawing* stage, and sketching can easily serve as the medium for such as stage. As Hairston made clear in "The Winds of Change," and as Holmes explicated in her article on the explicit practices of prewriting, one of the key benefits of prewriting is the way it reveals to students, through experience, that composition is a messy, nonlinear process, and oftentimes it is a struggle. In chapter 2, studying the writing of picturesque author Uvedale Price yielded roughness as a core characteristic, and core value, of the sketch. The rough nature of sketching communicates to students the rough, nonlinear process that is just as much a part of visual composition as it is of verbal composition. The same logic that has led to pre-writing and writing-to-learn strategies that have become core to many composition classrooms applies equally well to visual composition. While we routinely ask students to build their way to a text through the process of writing, we do not afford our students the same chance to build to an image by drawing.

4.4 Classroom Practice: Sketching and Writing Together

One avenue to explore that has only been obliquely referenced in this thesis so far is the possibility of using verbal modes of composition to complement and improve visual modes and vice versa. This is not to make the fallacy of making one mode subservient to the other, but rather it is an effort to blend modes and to understand how different modes of learning and communication can be best used together. To reexamine

the work of Sema Soygenis, Murat Soygenis, and Emine Erktin, their study explicitly sought to understand how writing can be used to enhance visual composition. To restate the general concept behind the study, students were asked to sketch a composition based on a simple prompt as preparation for writing a short text based on the same prompt. A second activity asked students to write a short text in preparation for a sketched composition. The study found a positive correlation between improved writing and improved sketching, leading the authors to theorize that writing before visual composition prompted students to use a cognitive strategy in their sketching (Soygenis, Soygenis, and Erktin 291-2). The authors do not, however, pay special attention to the other half of what their results indicate, namely that sketching first correlated positively with improved written texts. Of course, the authors of the study are scholars in architectural design and so are ultimately interested in improved visual designs, but this second unstated conclusion has implications for composition instructors.

In a way, composition instructors already know and draw on the power of visualization as a tool for improving writing. Activities such as mapping and outlining already mark the ways in which drawing and visualization can be used in the early stages of writing to improve organization and understand the overall shape of a text. Therefore, teachers need not introduce something entirely new into the classroom, but rather make sketching a more integral part of the writing process, at least for the more visually minded student. For example, if the aim of a particular writing assignment is for students to show their understanding of a concept, the students might first be asked to sketch a visual representation of their understanding of that concept. Or, to take another prototypical first-year composition assignment, if students are asked to describe a space

in writing, they might first be required to observe and sketch the space. Again, because sketching makes plain gaps in current understanding, it requires the sketcher to attempt to fill in their as-of-yet incomplete understanding. As with the pre-writing and pre-drawing concepts discussed above, sketching helps students build up toward a finished composition.

4.5 Classroom Practice: Place/Object Observation

Another way to take advantage of the power of the sketch to force the sketcher/viewer to fill in the blanks of the sketch is to push students to be more observant, more descriptive, and to be more concrete in the details that they choose to represent both in word and in image. This exercise might be used as a simple hook for a daily lesson, as the major activity in the lesson itself, or as a larger assignment, as will be discussed below. Students are either presented with, or they select for themselves, a complex object or space that they will be tasked with describing in their writing. In the case of observing a space, the instructor will take students on a short walk to a space outside the classroom—a hallway, an open-air court, the campus quad. To aid in their description, they will first be required to construct a detailed sketch of the object or place. Because students must fill the blank page, they must select the specific and concrete visual details of the object or space. Unlike a purely textual description of an object or place, students will be able to tell at a glance how fully they have described the subject, and what remains to be captured on the blank page. Of course, as discussed in Chapter 3, many professional sketches use both images and words, so students should be encouraged to write supplementary notes among their sketches, both as reminders and as a way to

record details of the other senses. After students have finished sketching, the subject will be re-hidden (by removing the object or by returning to class), and students will be required to compose a written passage describing the object or space as fully as possible. This assignment pushes students to use concrete details in their descriptions by showing them visually what details they have noticed and requiring them to literally complete the picture.

This exercise can easily be adapted to a larger assignment, especially since many composition classes already use observational papers. Sketching the space can be the first step in the assignment, fulfilling the same purposes as in the exercise outlined above. In the assignment, however, students will be required to embed images within their descriptive text. Students will therefore use their sketches as drafts for the final multimodal project.

4.6 Classroom Practice: Sketching the Writing Process

Donald McQuade and Christine McQuade's textbook *Seeing & Writing 4* plants visual modes of composition directly into the classroom alongside more traditional verbal modes, an accomplishment that certainly deserves praise. The book's first pages immediately show words and images working together as well as the communicative power of images in a step-by-step graphic representation of the writing process, what they refer to as "Visualizing Composition" (McQuade and McQuade 71). It is a delightful read, and certainly has its uses to give students an idea of what the writing process *might* look like, but it is also indicative of some of the shortcomings of *Seeing &*

Writing and other texts like it that allow students to observe and analyze images rather than create them.

First, the "Visualizing Composition" features of the book are highly prescriptive by their nature, by which I mean that they are telling students what the writing process looks like. While the passage does make concessions to the non-linear, recursive process of writing, it does not allow students to describe their own writing processes as they exist. More to the point, the text asks students to *see* and *write*, but never to draw. Taking inspiration from McQuade and McQuade's visualization of the composition process, this exercise asks students to sketch their own writing processes. Student's may have a difficult time understanding exactly what they are being asked to do, so the instructor should model the kind of drawing and writing expected for the exercise, creating a comic, a flowchart, or another graphic representation of his or her own writing process.

This activity requires students (and teacher) to pay attention to the writing strategies, patterns, habits, pitfalls, and distractions. Furthermore, they must reach an understanding of their writing process such that they can communicate it visually and verbally to another person. In doing so, students will need to externalize on paper the process and sub-processes of writing that they may not have paid any attention to previously. From here, students will be asked to write a short essay explaining the reason behind certain actions in their writing processes, as well as ways that they might change their writing process.

4.7 Classroom Practice: Journaling Text, Image, and Sound

Like the previous classroom practice, this exercise will ask students to consider how communication and rhetoric informs their lives in ways that they may not have before. In contrast, however, it will ask them to do so outside the classroom and within their daily lived experience. For this practice, students will be required to keep a journal reflecting on how texts, images, and sounds attempt to shape their actions. On a daily or weekly basis, depending on the prominence of the journal in class, students will be asked to reproduce in a sketch a multimodal composition attempting to influence them. Examples might include print or TV advertisements, signs or posters, or magazine articles. Students need not go out of their way to find such compositions, rather they are asked to sketch, annotate, and reflect in writing upon the multimodal compositions that they are already encountered with. Indeed, part of the purpose of the assignment is to raise student awareness of the presence of the many modes of rhetoric around them and the power that they wield. More specifically, students should be asked to explain the purpose behind the composition that they are observing, and to explain their reasoning through both writing and drawing. Sketching serves as a powerful medium for this kind of reflection, because it requires students to physically recreate the elements of the composition with which they are faced, which will demand more careful observation.

4.8 Activity: Dissection and Observation of Multimodal Compositions

Having outlined a number of general sketching practices that can be attached to and integrated into current pedagogical praxis, the remainder of this chapter will be dedicated to detailing more specific activities dedicated to sketching and multimodal composition. These activities will draw from the core characteristics of sketching as

derived from the picturesque writers, the uses of sketching across the curriculum, and recent research in composition studies. The first of these activities is an inductive study of multimodal compositions.

Pedagogical Aims

As explored in the first chapter of this thesis, multimodal compositions are evolving at an accelerating pace. The multimodal compositions we create and consume today are entirely different animals than they were ten or even five years ago. We have no reason to expect the changes in these kinds of composition to slow down—if anything, we should expect the rate of change to increase as new media proliferate and provide fuel for the next generation of multimodal composition. This activity is designed to help students think about the reasons behind individual choices in a multimodal composition, both to understand specific instances of multimodal composition, but more importantly to provide them the generic tools to analyze many kinds of multimodal composition. This activity also serves as a scaffolding exercise that eases students into the principles of multimodality and sketching before giving them fuller control over the exercise.

Description of Activity

To begin the activity, the teacher demonstrates a "dissection" of a print multimodal composition, such as a poster, print advertisement, comic strip, or book jacket. Asking students for particular features of the composition that strike them, the teacher cuts out the corresponding portion of the composition. This can be done literally, using printed materials, or digitally using simple and widely available tools such as the Microsoft Paint program. The teacher may also, of course, model the kinds of features she wants the students to keep an eye out for by providing a few examples. Each cutout

component of the composition is then appended to a blank page and annotated with a caption provided by the class, explaining the purpose of the component and how it achieves its particular goal. Having modeled the dissection, student, either individually or in groups, get a chance to perform their own dissection on a different multimodal composition, perhaps one of their choosing. Having created their dissected and annotated compositions, the students are asked to perform the exercise again, except instead of cutting out particular elements of the composition, students are asked to create an annotated sketch of the composition.

Rationale

In "Reading the Visual in College Writing Classes," Charles A. Hill makes a powerful call that "students can and should be taught the cultural work of images in our society...We are a largely visual society, and many of these powerful cultural concepts are encoded within easily recognizable images (e.g. representations of George Washington, the Statue of Liberty [for freedom])" (116). Certainly students need to understand the ways in which images operate on the viewer, especially in a place and era in which images hold so much currency. This activity does the work that Hill discusses, asking students to closely "read" and understand the operation of images, but it also fulfills a number of pedagogical purposes that Hill overlooks in regards to images.

First, Hill chooses to focus on the idea of "reading" images. Not only does Hill frame images within the purview of verbal composition, but he also neglects the need for students to create images. Reading and writing have long been understood to be crucial skills for effective verbal composition. Likewise, I would argue that both the analysis and creation of images are needed to teach students effective visual composition. The

dissection and observation activity neatly engenders this analysis of images *through* creation. Students pull apart, reconstitute, and eventually sketch images in order to understand them.

Responding to Neal Lerner, this activity also incorporates the inductive learning of the laboratory setting into the composition classroom, particularly through drawing. Lerner writes that "by observing and drawing to learn, students would not merely be passive repositories of information but active participants in the creation of meaningful knowledge, the essential task of laboratory learning" (130). Here, Lerner is speaking of how drawing to learn has ideally been used to encourage students to construct knowledge for themselves specifically in the science classroom, the implication being that we as composition instructors could possibly do something similar in the classroom, though he himself offers little in the way of practical applications. This activity is one such instance of laboratory-style drawing to learn, one that engages visual, verbal, and kinesthetic learners.

Monitoring for Understanding

Perhaps one of the happiest consequences of teaching students to analyze images by creating images is that this method results in the creation of an artifact that quickly reveals a student's current understanding of the principles under discussion. Both student and teacher benefit from the process of externalization that sketching requires. Much as in the case of figure 2 from chapter 3 (reproduced on the following page), students will be able to visually synthesize their current understanding and find the places where information is incomplete. Teachers, on the other hand, will be able to see the student's

thinking process: what questions are the student asking (and not asking)? What places are sources for confusion? What patterns does the student notice?

This practice mirrors assessment strategies commonly used in the classroom, which use in-class writing as a tool to monitor what students have learned and what concepts students may be struggling with. Teachers can further use such in-class writing assessments to adjust future lesson plans according to their growing knowledge of where the class stands collectively and as individuals. By introducing sketching into what has traditionally been a writing exercise, we open the door to more readily monitor student's understanding of visual rhetoric.

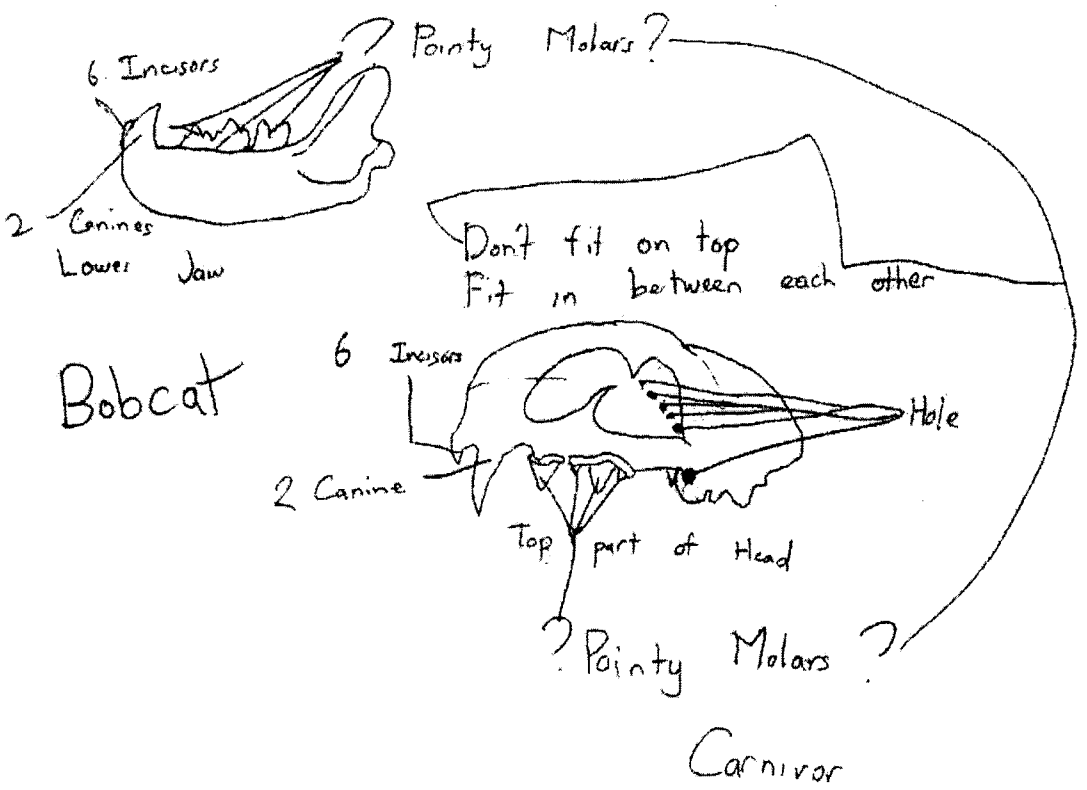


Figure 2. By sketching, the student makes her thought process visible, making monitoring for understanding a simple task.

Students can also monitor and improve each other's understanding by dissecting and sketching the same composition on an individual basis and then comparing the end results. As noted in the previous chapter discussing the use of sketching in architecture, sketches are eminently useful in the rapid sharing of ideas. Students will share what they have seen in the composition, and because they have externalized that vision, other students will be able to see through their eyes.

4.9 Activity: Completing the Composition

Pedagogical Aims

This second activity capitalizes on the concept of incompleteness in sketches. The fragmentary nature of a sketch demands that the viewer fill in the missing portions of the sketch imaginatively. This assignment in particular addresses the multimodality of modern texts, requiring students to produce a composition that combines verbal and visual modes creatively. Finally, this activity, as with the previous one, is a scaffolding exercise that will bridge students from analyzing a multimodal composition to producing one of their own.

Description of Activity

To prepare for the activity, the teacher prepares an image from either a graphic novel or cartoon strip by removing a panel from the completed text. What remains should be enough to suggest a narrative and provide students with the tools for understanding the general arc of the text. For an example of such an image would look like, see figure 9 on the next page.

Working individually or in small groups, students are then asked to construct a

Figure 9. A modified panel from "Darkness" by Boulet. The remaining panels establish patterns, in terms of art, prose, and narrative arc, providing students a scaffolding tool to create their own multimodal composition by creating the missing final panel.

number of conceptual sketches to fill in the missing panel or panels. Students should be required to construct a sufficient number of concepts in a short enough time frame that the sketches must be rapidly and roughly made—the idea here is to proliferate many possible solutions. After developing their ideas, the students must then choose one of their concepts to more fully develop. Students create a second, more detailed sketch, filling in some of the blanks in the first crude "thinking" sketch. As an option, to get students thinking in terms of an audience, the class may then vote on the best panel or panels and explain why it works.

Rationale

Addressing the growing importance of the Internet to composition, Craig Stroupe reminds us that "those in English studies would benefit from revisiting the text/media dichotomy—particularly the dialogism between verbal and visual discourse on the single lexia" (13). To a degree, English studies have heeded Stroupe and the other scholars who made similar calls to action through a dedicated investigation of multimodality and multiple literacies. But we must also give our students a chance to construct texts that not only benefit from, but rather demand the blending of verbal and visual modes. The activity detailed above demands that students blend together verbal and visual modes by establishing a clear pattern through the initial already-completed panels of the graphic novel or cartoon.

To quote Stroupe once more, multimodality means more than simply the use of multiple modes of composition, rather it offers "the potential for dialogically constitutive relations between words and images—in a larger sense, between the literacies of verbal and visual cultures—which can function as a singly intended, if double-voiced, rhetoric"

(15). Successful multimodal compositions combine harmonically the "voices" of verbal and visual language, and thus successful classroom praxis will require students to use these dual modes in conjunction with one another. The medium of the graphic novel or cartoon are particularly effective in helping students reach this realization because word and image work so closely together within these genres. And while the use of the graphic novel in the classroom has been growing in popularity in recent times, this activity does more than ask students to close read, analyze, and interpret a graphic novel, though these are worthwhile aims. Rather, this activity asks students to understand how word and image work together to make meaning, and they learn this through the firsthand experience of creation. Because students must draw the panels as well as write them, they must use both verbal and visual clues to construct the missing panel. Through experience, students will begin to learn how to construct multimodal or "double-voiced" compositions, an exercise they can draw upon in more extended multimodal assignments.

Monitoring for Understanding

Once again, as will be the case for virtually all activities that require students to produce sketches, the material produced by students serves as a ready indicator of their understanding. In this particular activity, teachers should particularly look for the ways in which students are using image to enhance word and vice versa.

Treating the activity as a competition will work particularly well as a way for students to monitor their own understanding of the concepts at play here. Of course, not all or even the majority of the panels will be stellar, but in their discussion of what panels were effective, students can discover the ways in which word and image work cooperatively to create an effective multimodal composition. The teacher may even take

the opportunity to take cues from a number of the completed panels to show how both visual and verbal elements from different students' entries work together to greater effect.

4.10 Activity: Sketching and Problem/Solution

Pedagogical Aims

This final sample activity explores one of the ways in which sketching can be used as a tool for problem-solving and writing in addition to its uses in visual composition. As with previous example, students will be required to proliferate a number of possible solutions in the service of efficient and effective design, critically selecting the best course of action. This activity requires students to adapt their composition techniques, both verbal and visual, to a specific audience and for a specific purpose.

Description of Activity

Drawing on a traditional assignment, this activity is to be used in conjunction with the popular proposal or problem/solution project, in which students are asked to identify a problem, often within their university, living community, or town, and propose a solution and means of implementation to resolve the problem effectively. The proposal for the solution is written to an actual audience, a party with the ability to bring about the solution to the problem. After students have identified the problem that they wish to attempt to solve and as a preliminary step to writing, students are asked to sketch many possible solutions to the problem. The goal, at first, is simply to generate as many possible solutions as possible in the interest of brainstorming. Eventually, students will settle on the best solution, continuing to create more refined sketches.

The ultimate goal of this part of the project is for students to include one or more

polished conceptual designs that will be embedded in their final report. This enables students to quickly and effectively communicate their final concept for the solution, and it also requires them to think in terms of multiple modes of communication.

In this particular version of the assignment, some topics will more readily lend themselves to visual representation than others. Here, teachers have the option to require students to choose a problem that necessitates visual representation. Alternatively, the teacher can use this as an opportunity to help students to use sketching as a means of representing the abstract.

Rationale

This type of assignment has a substantial history in the composition classroom, and for good reason. Juliet Musso, Robert Biller, and Robert Myrtle frame writing *as* problem-solving, explaining that writing and problem-solving are "inextricably linked to [a student's] ability to frame an issue, gather and analyze information, and to structure a helpful response" (637). The processes of writing and problem-solving require many of the same mental tools, and consequently developing one of these processes improves the other. Furthermore, by giving requiring students to address an actual problem and present their solution to a specific and real audience, students will have a clearer idea of the purpose of their writing.

Using sketching as a tool both in generating solutions to a problem and in presenting those solutions incorporates the visual into projects such as this without any additional time input. Furthermore, as revealed in the cross-curricular study of sketching in engineering, architecture, and design, more sketches at the outset of a project results in better quality solutions. In the case of the problem/solution paper, sketching will yield a

better understanding of the problem, more effective solutions, and ultimately a more rhetorically effective final proposal aided by the images students created to communicate their solution.

Monitoring for Understanding

Teachers can evaluate the visual side of projects such as this as one of many criteria for success. Additionally, teachers can evaluate how well visual modes of communication were integrated with verbal in the final product.

However, the advantage to sketching, especially in the early stages, is that teachers do not have to wait for the final visual design to evaluate and provide feedback to students. Just as we require students to provide written drafts of their papers in order to receive feedback and revise, we can now require sketches as drafts of multimodal compositions.

4.11 Conclusion

In a sense, this thesis itself is a sketch, an as-of-yet incomplete image that suggests a fuller picture to be realized. Drawing on a rich tradition of sketching, both in literary terms from the picturesque writer and in practical, professional terms from a number of disciplines across the current curricular landscape, we have a firm foundation and strong motivations for using sketching in the composition classroom. In a world that is becoming more visually minded, our students will need to be equipped with tools that will empower them to construct blended, multimodal texts, and sketching has been put forward as the tool to accomplish this feat. Yet much work remains to be done to complete this vision.

Implementing the practical classroom practices laid out in this project, and simply incorporating sketching as a means for students to draft visual composition, instructors and researchers will need to test the measures suggested here. Indeed, if this project inspires teachers simply to afford their students the opportunity to slow down and draw images for themselves rather than simply "reading" them, much will have been accomplished.

As a final note, the power of sketching has very recently become recognized as a tool for idea generation, refinement, and communication in the private sector. In April 2012, Rachel Emma Silverman of *The Wall Street Journal* wrote an article investigating a surprising practice that is taking root in many large companies—none other than sketching. Echoing the findings of this project, Silverman writes that these organizations require employees to sketch in order to "generate ideas, fuel collaboration, and simplify communication," and that "putting pen to paper also is seen as an antidote to the pervasiveness of digital culture, getting workers to look up from their devices" and at each other instead ("Doodling"). Sketching, then, is becoming an invaluable skill that students can take with them from the composition classroom to their lives beyond higher education.

Works Cited

Anderson, Daniel, Anthony Atkins, and Cheryl Ball. "Integrating Multimodality into Composition Curricula: Survey Methodology and Results from a CCCC Grant." *Composition Studies* 34.2 (2006): 59-84.

Bartholomae, David. "Inventing the University." *When a Writer Can't Write: Studies in Writer's Block and Other Composing Process Problems.* Ed. Mike Rose. New York: Guilford, 1985. 273-85. Print.

Bawarshi, Anis S. and Mary Jo Reiff. *Genre: An Introduction to History, Theory, Research, and Pedagogy*. West Lafayette, Indiana: Parlor Press, 2010. Print.

Bolter, J. David and Richard Grusin. *Remediation: Understanding New Media.* Cambridge, Mass: MIT Press, 1999. Print.

Boulet. "Darkness." Bouletcorp.com. Web. 2 April 2012.

Curtiss, Deborah. "The Rewards of Visual Literacy: An Artist's Perspective." *Symposium of the International Visual Literacy Association.* 25-29 June 1993. Selected Reading.

Denton, Howard and John P. Williams. "Efficient and Effective Design: The Purpose of Sketching and Drawing." *Technology Teacher* 55.6 (1996): 15-17, 19-20. Print.

Emig, Janet. "Writing as a Mode of Learning." *College Composition and Communication* 28.2 (1977): 122-128. Print.

Fish, Jonathan and Stephen Scrivener. "Amplifying the Mind's Eye: Sketching and Visual Cognition." *Leonardo* 23.1 (1990): 117-126. Print.

Flower, Linda and John R. Hayes. "A Cognitive Process Theory of Writing." *College Composition and Communication* 32.4 (1981) 365-87. Print.

Fowler, H. Ramsel, Jane E. Aaron, and Cynthia K. Marshall. *The Little, Brown Handbook*. New York: Longman, 2010. Print.

George, Diana. "From Analysis to Design: Visual Communication to the Teaching of Writing." *College Composition and Communication* 54.1 (2002): 11-39. Print.

Gilpin, William. *Three Essays: On Picturesque Beauty; On Picturesque Travel; and On Sketching Landscape*. London: Gregg, 1792. Print.

Goldschmidt, Gabriela. "The Dialectics of Sketching." *Creativity Research Journal* 4.2 (1991): 123-143. Print.

Hairston, Maxine. "The Winds of Change: Thomas Kuhn and the Revolution in the Teaching of Writing." *College Composition and Communication* 33.1 (1982): 76-88. Print.

Hill, Charles A. "Reading the Visual in College Writing Classes." *Visual Rhetoric in a Digital World: A Critical Sourcebook*. Ed. Carolyn Handa. Boston: Bedford / St. Martin's, 2004. 107-123. Print.

Holmes, Kerry P. "Show, Don't Tell: The Importance of Explicit Prewriting Instruction." *The Clearing House* 76.5 (2003): 241-243. Print.

Honore, Carl. *In Praise of Slowness: Challenging the Cult of Speed.* New York: HarperCollins Publishers, 2004. Print.

Hyland, Ken. *Genre and Second Language Writing.* Ann Arbor: University of Michigan Press, 2004. Print.

Kames, Henry Home, Lord. *Elements of Criticism*. Edinburgh: J. Bell and W. Creech, 1788. Print.

Kimber, Kay, and Claire Wyatt-Smith. "Working Multimodally: Challenges for Assessment." *English Teaching: Practice and Critique* 8.3 (2009): 70-90. Print.

Kivett, Hanan A. "Free-Hand Sketching: A Lost Art?" *Journal of Professional Issues in Engineering Education & Practice* 124.3 (1998): 60-64. Print.

Knight, Richard Payne. *An Analytical Inquiry Into the Principles of Taste.* London: Payne, 1808. Print.

Kress, Gunther. "Multimodality, Multimedia, and Genre." *Visual Rhetoric in a Digital World: A Critical Sourcebook.* Ed. Carolyn Handa. Boston: Bedford / St. Martin's, 2004. 38-54. Print.

Lane, Diarmaid, Niall Seery, and Seamus Gordon. "A Paradigm for Promoting Visual Synthesis through Freehand Sketching." *Design and Technology Education* 15.3 (2010): 68-90. Print.

Lerner, Neal. *The Idea of a Writing Laboratory*. Carbondale, IL: SIU Press, 2009. Print.

McQuade, Donald, and Christine McQuade. *Seeing &Writing 4.* Bedford/St. Martin's: Boston, 2010. Print.

Musso, Juliet, Robert Biller, and Robert Myrtle. "Tradecraft: Professional Writing as Problem Solving." *Journal of Policy Analysis and Management* 19.4 (2000): 635-646. Print.

"NCTE/IRA Standards for the English Language Arts." *National Council of Teachers of English.* NCTE, 2011. Web.

Price, Uvedale. *Essays on the Picturesque, as Compared with the Sublime and the Beautiful.* London: Mawman, 1810. Print.

Sachse, Pierre, Winfried Hacker, and Sven Leinert. "External Thought: Does Sketching Assist Problem Analysis?" *Applied Cognitive Psychology* 18.4 (2004): 415-425. Print.

Semali, Ladislaus M. "Integrating Visual Literacy across the Curriculum." *Annual Conference of the International Visual Literacy Association.* 13-17 October 1993. Selected Reading.

Silverman, Rachel Emma. "Doodling for Dollars: Firms Try to Get Gadget-Obsessed Workers to Look Up—and Sketch Ideas." *The Wall Street Journal.* Dow Jones & Company, Inc., 24 April 2012. Web. 26 April 2012.

Smith, Tracey and Amy MacDonald. "Time for Talk: The Drawing-Telling Process." *Australian Primary Mathematics Classroom* 14.3 (2009): 21-26. Print.

Soygenis, Sema, Murat Soygenis, and Emine Erktin. "Writing as a Tool in Teaching Sketching: Implications for Architectural Design Education." *International Journal of Art & Design Education* 29.3 (2010): 283-293. Print.

Stafford, Barbara. "Visual Pragmatism for a Virtual World." *Visual Rhetoric in a Digital World: A Critical Sourcebook.* Ed. Carolyn Handa. Boston: Bedford / St. Martin's, 2004. 209-259. Print.

Stroupe, Craig. "Visualizing English: Recognizing the Hybrid Literacy of Visual and Verbal Authorship on the Web." *Visual Rhetoric in a Digital World: A Critical Sourcebook.* Ed. Carolyn Handa. Boston: Bedford / St. Martin's, 2004. 13-37. Print.

Topinka, Lorie, and Diane T. Sands. "Sketching as a Science Tool." *Connect Magazine* 19.1 (2005): 4-7. Print.

"Twitter Study—August 2009." *Pear Analytics Blog.* Pear Analytics. Web. 1 March 2012.

Westermeyer, Juan Carlos Briede and Bernabe Hernandis Ortuno. "New Methods in Design Education: The Systemic Methodology and the Use of Sketch in the Conceptual Design Stage." *US-China Education Review* 8.1 (2011): 118-128. Print.

Whitney, Anne, Sheridan Blau, Alison Bright, Rosemary Cabe, Tim Dewar, Jason Levin, Roseanne Macias, and Paul Rogers. "Beyond Strategies: Teacher Practice, Writing Process, and the Influence of Inquiry." *English Eduction* 40.3 (2008): 201-230. Print.

Westbrook, Steven. "Visual Rhetoric in a Culture of Fear: Implements to Multimedia Production." *College English* 68.5 (2006): 457-80. Print.

Wysocki, Anne. "Opening New Media to Writing: Openings and Justifications." *Writing New Media: Theory and Applications for Expanding the Teaching of Composition.* Wysocki et. al., eds. Logan: Utah State Univ. Press, 2004. 1-23. Print.

Yang, Maria. "Observations on Concept Generation and Sketching in Engineering Design." *Research in Engineering Design* 20.1 (2009): 1-11. Print.

"Your World, More Connected." *Twitter Blog.* Twitter. Web. 1 March 2012.