Evaluating the UX of Instructor Feedback: An Exploratory Analysis

by

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Worry no more, Will.

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Abstract

Effective strategies for responding to student writing have long been a concern in writing studies. The purpose of this research was to ascertain students' perceptions of, expectations for, and interaction with instructor comments in order to evaluate the user experience (UX) of instructor feedback, with the goal of determining effective and engaging response techniques.

To better understand how instructors were commenting on student writing, 69 instructors nationally and 7 (of 18) teachers of Introduction to Technical Writing at Texas Tech University were surveyed as to their methods of providing commentary and their evaluation of the effectiveness of their methods for their students. In addition, 60 Introduction to Technical Writing students were surveyed as to their expectations of, experience with, and preferences for receiving feedback on their writing. Sixteen of those surveyed also participated in user testing, during which they accessed their assignment in Blackboard, reviewed their instructor's comments, and composed and prioritized a revision list based on the feedback they received.

The findings from this study indicate that students by far have experience mainly with textual feedback (either handwritten or through embedded digital text), with little to no experience of alternative forms of commentary, such as audio or video. Instructor conference, however, is a preferred medium for delivery. Part of the reason for this preference is a greater sense of perceived engagement, less chance of confusion as to instructor tone and meaning, and a greater sense of positivity towards the experience as a whole. This study also uncovered issues with student interaction with the Blackboard UI, leading to user frustration and difficulty in completing the representative tasks.

My analysis suggests that to improve the UX of commentary, instructors should contextualize their statements and be conscious of the potential misinterpretations of tone. In addition, employing multimedia strategies (such as a comprehensive class-wide screencast) better addresses multiple learning styles. Finally, given the issues that students faced with the learning management system, I urge instructors towards a "Pedagogical|UX Negotiation," in which they anticipate the potential practical impediments to achieving pedagogical goals and implement strategies that allow students to overcome these impediments.

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Chapter I

User Experience Design (UXD) and Response Pedagogy

Why is instructor response so important for writing/multimodal composition instruction? From a composition/technical communication instructor's perspective, feedback, even when it is part of a summative evaluation, is still formative in nature. Though at times feedback serves as a type of justification for a particular grade, it also functions to give students guidance as to strategies and considerations for both revision of the work in question and future compositions. Feedback is, essentially, an instructional method, intended to "feed-forward" to help students achieve a level of composing fluency. It may be one of the most essential components of composition and technical communication instruction.

Given the importance of instructor response, I was driven to question what strategies were effective, and what could be done better. The purpose of this dissertation research was to ascertain students' perceptions of, expectations for, and interaction with instructor comments in order to evaluate the user experience (UX) of instructor feedback, with the goal of determining effective and engaging response techniques. My research was guided by the following questions:

- How are instructors currently providing feedback to students (what media, content, and style)?
- What experiences with and expectations for feedback do students have?
- How do students typically interact with feedback?

- How might the medium of the feedback impact its usability (how effective, efficient, engaging, error tolerant, and easy to learn it is for students), and why?

To strive to answer these questions, I have conducted a study that takes up Still and Koerber's call for further research, employing user testing to determine "the relative effectiveness of various mechanisms for delivering feedback" (p. 227).

Moving from Personal Experience to Disciplinary Questions

As an instructor, when I compose feedback, regardless of medium, I question if my students “get it.” By this, I mean I strive to provide feedback in which my students understand in what ways I, as an audience, need clarification or may be confused or even set off track, and just as importantly, where and how in their compositions they have impressed or even moved me through their ideas and their expression and development of those ideas. Typically, I provide feedback as a vehicle for revision, offering suggestions, making observations, and occasionally, pointing out errors. But how do I, as an instructor, know if my feedback is effective? In other words, how do I determine if what I aim to communicate is being comprehended and can be applied by my students? Like many instructors, I've reviewed the scholarship, ranging from Nancy Sommers's early (1982) study of response, to Ed White's *Assigning, Responding, Evaluating: A Writing Teacher's Guide* (2006); like some instructors, I've also tried different media for feedback, ranging from handwritten comments on student papers to digital embedded commentary in Microsoft Word and Adobe Acrobat, to screencast feedback using programs such as Camtasia and Jing.

On a small scale, in formal conferences, informal conversations, and emails, I have attempted to evaluate the effectiveness of these different strategies by asking my students to explain to me what they believe that they can do to improve their overall composing/ communication skills as well as address specific issues of composing/ communication in

particular assignments. These exchanges often enlighten me as to what I can do as a teacher to improve my feedback techniques, to facilitate not simply “fixing” a submission but guiding the student to be able to better analyze and improve upon his or her own composing. In essence, praxis is subjected to iterative usability evaluation: determining, as Quesenbery (2001) explains, how effective, efficient, engaging, error tolerant, and easy to learn a system is. However, my process, while iterative, did not always employ a more structured usability framework. For nearly my first ten years teaching composition, my practices, though constantly undergoing revision, didn’t follow any pattern of consistent or structured assessment and redevelopment, beyond the institutional assessment of student course evaluations.

This began to change in 2007 when I attended a Computers and Writing workshop by Shaun Slattery, Susan Miller-Cochran, Shelly Rodrigo, and Jason Swarts, entitled “Usable Usability in the Composition Classroom.” It was the first time I had heard the term “usability,” much less thought about how to use this toolbox of techniques to both evaluate my teaching and integrate it into classroom practices such as peer review. I've conducted mid-semester surveys and observed my students reviewing feedback and noted when they have needed clarification or explanation, looking to see if there were trends or patterns in responses. Peer review or writing workshops have been framed as a type of UX testing: students aren't asked to read drafts looking for errors as much as situating themselves as the audiences of their peers' communication, and they must evaluate how clear that communication is to them, as well as whether (as much technical communication requires) they have sufficient but not overwhelming information to implement (or be moved to implement) the directives and suggestions of, for example, memos, instructions, and proposals. On a pedagogical level, evaluating usability is a metaphor for the process of developing effective rhetoric: the users, the audience, are primary. If the users/audience cannot navigate the design, presentation, and content—whether it be of

software or of argument—then the facets that lead to error, confusion, or a less than satisfactory experience must be identified and addressed.

My question if students “get” what is being lauded, questioned, and even criticized in composition feedback is not mine alone. Discussions with other composition and technical communication instructors about our classes and our students often turn to this very issue. And these conversations inevitably elicit responses reflecting both frustration and the sense of failure. If our area of expertise is supposed to be in developing effective communication, why does it seem we are not communicating our recommendations effectively? Is it that the students don’t care (which is dismissive) or that our methods of providing feedback are not meeting our audience’s needs? I am constantly reminded of one of the fundamental precepts of usability: "we are not our users." My area of specialty—writing and composition— is not, usually, my students'. Terms I am comfortable and fluent with— such as "comma splice," "parallelism," even "rhetoric"— are ones that my students are often learning during the course. Our goals are often different; my primary objective is to guide students to compose effectively and efficiently, while the foremost concern of many students is getting a good grade. At the basis of all of this is one fundamental truth: with my years of practice, responding to feedback and the composing process itself comes much more easily to me than it does to my students. Furthermore, my ways of working with response is not necessarily the same as the practices of other advanced writers, as our varied approaches have been developed through both individual experiences and accommodating our different learning styles. As an instructor, therefore, I need to better understand what challenges students typically face when reviewing and applying the advice they receive on their work.

Conversations in the Discipline

For over one hundred years, the field of writing and composition studies has questioned how best to provide commentary to students on their writing. It wasn't until what Yancey (1999/2009) categorizes "the second wave" of assessment that the role of feedback—beyond evaluation of grammatical or mechanical errors—became an issue of attention in composition studies. Yancey credits Nancy Sommers with "the first formal study of response" (p. 143). While Sommers's research, as well as a more in-depth analysis of the historical trends in feedback theory and scholarship, are covered at length in Chapter 2, two key findings of the study are especially pertinent to feedback in regards to UX: the negative effects of the teacher's appropriation of the student text (i.e., engagement), and presentation that makes it difficult for students to distinguish between higher (such as content, support, and argument) and lower (grammar, mechanics, punctuation) order concerns (i.e., effectiveness, efficiency, and ease of use). Another compositionist, Ed White, also introduces concepts of usability, though it, too, is not identified as such. White's landmark work, "Holisticism" (1985/2009), argues for the holistic scoring of writing in assessment, based on "the underlying view that writing should be evaluated as a whole" (p. 22). White further argues that holisticism helps, in part, "resist the forces of… analytic reductionism (with its emphasis on the supposedly immutable laws of usage and grammar)" (p. 24). White's stance, further developed in subsequent research and scholarship, has been synthesized and applied in writing feedback pedagogy as limiting commentary to two or three higher order concerns, with minimal attention to grammar and correctness. In other words, avoid information overload for students, which speaks to both effectiveness and ease of use.

The works of Sommers and White are highlighted here because of their influence on longstanding theories and practices of writing feedback. Scholarship that has since been

published often seemingly affirms these strategies first proposed in the early 1980s. For example, both Underwood and Tregidgo (2006) and Wingate (2010) argue that the reception and engagement with feedback is affected by its amount, its tone, and the style of presentation—clear echoes of Sommers and White. With such consistent claims, then, why hasn't "the problem of feedback" been solved? It is possible that instructors do not practice what the field preaches. Ferris (2014) questions whether the research in the field influences how teachers provide feedback. To determine this, Ferris's team surveyed 129 instructors as to their perceptions of and training in providing feedback, then interviewed 23 of the respondents, who each provided between 3 and 5 commented student texts. In addition, the interviewers composed a 2-3 page case study narrative based on survey and interview responses. Interview responses and instructor commentary were analyzed and coded as to their alignment between teacher philosophy and commenting practice. Ferris found that these instructors, at least, generally practiced commentary in ways that were informed by research and scholarship: among their goals, they aimed to be conversational rather than directive (i.e., to not appropriate the student's text) and to construct feedback that allowed students to prioritize issues (e.g., higher and lower order concerns). In other words, it seems that instructors are following the recommended practices of the field in responding to student texts, but without the desired result.

Responding to Learners: Learning Styles and Multimodality

The consideration of multimodal approaches (such as screencasting) to instructor response is not based solely on cost or trends, but on appealing to the ways that individuals respond to and process information. Traditional (written) feedback may only appeal to certain learning styles . Kolb and Fry (1975), Felder and Silverman (1988), and Garner (1983/2011), among others, have put forward compelling arguments concerning the benefits of appealing to

student learning styles (or, as Garner terms them, "intelligences"—defining an intelligence as "a computational capacity—a capacity to process a certain kind of information" [p. 6, 2006]). Learning styles are assessed in scales, continua along which evaluations typically demonstrate a stronger affinity for one style over another. Where the learner falls within these scales do not necessarily imply that he or she is unable to learn in an opposing style, but rather that the learner can more easily process and interpret information if it is presented in a manner that appeals to his or her learning styles. One of the most popular learning styles heuristics, the Felder-Silverman scale, consists of four categories: sensing-intuitive, visual-verbal, active-reflective, and sequential-global. Assessments such as Felder and Silverman's "Index of Learning Styles" are widely used as an aid for both students and instructors to develop strategies that will enhance learning . However, some, such as Pashler et al. (2008), have argued a lack of scientific evidence supporting the validity of these psychological assessments, and moreover, question whether there is a causal relationship between instruction that appeals to a student's learning style and the student's performance. This debate is mostly being played out in the field of psychology, but research in neurobiology (Kraemer, Rosenberg, and Thompson-Schill 2009) suggests a link between self-reported learning styles and cortical activity. Multimodality, as it is multisensory, may offer opportunities for engagement and cognition among a more diverse range of learners than solely text-based response does.

Technological Influences on Pedagogy and Praxis

In the field of composition instruction, multimodal assignments—that is, assignments that call for the integration of language, video, and audio—have increased in prevalence. Students in courses ranging from introductory composition to technical writing may create posters, podcasts, and instructional videos as well as the “traditional” essay or proposal. The trend in multimodal assignments has been perpetuated by many factors, not the least of which

is availability and affordability. Students have access to audio and video recording through smartphones and tablets; editing programs such as iMovie and MovieMaker are packaged with computer operating systems, and applications such as Audacity are freely available for download.

Instructor feedback on these multimodal compositions, however, has taken a primarily written form, whether it be through an appended written rubric or in-text commentary using, for example, Microsoft Word's or Adobe Acrobat's track changes/commentary functions or the inline editing/commentary tools offered by learning management systems such as Blackboard or Canvas. Written feedback, however, is not without its drawbacks; numerous researchers have noted that for students, commentary is often difficult to interpret, prioritize, and most importantly, apply effectively in revision (e.g., J. Sommers, 1989; N. Sommers, 1982; Thompson & Lee, 2012; Weaver, 2006). The general sentiment among such researchers concerning the insufficiencies of written feedback is that the lack of instructor "presence" in the writing (meaning the lack of intonation, ranking of importance, and detailed explanation in context) leads to a "loss in translation" that could be rectified by strategies that better imitate the preferred and seemingly more effective setting of conversational, face-to-face conferencing (Still, 2006; Harper, Green, & Fernandez-Toro, 2012).

While multimodal means of feedback have been available for quite some time, the technology has been either clunky or cost-prohibitive. For example, audio commentary has been in use since at least the late 1960s (J. Sommers, 1989), but early iterations required that a cassette tape be returned with the paper or project—making the return materials bulky and requiring additional equipment (i.e., a cassette player) for use. In the mid-2000s, however, this began to change. Microsoft Word 2003 and Adobe Acrobat 9+ (released in June 2008) both provide options for including audio commentary, which becomes embedded in the file. As Still

(2006) notes, however, files that are returned with audio commentary are often large (several megabytes) in size; if response files are emailed, the recipient's account must be able to accept large attachments, and the file needs to be downloaded to the user's drive for system stability (pp. 472-73). In other words, students must be trained on various unrelated aspects of technology in order to access feedback. With the advent of cloud storage such as DropBox and increased bandwidth capability and access, the larger file sizes are more manageable, but audio commentary still does not allow for demonstration—an approximation of the face-to-face environment—and is limited in that comments tend to be seen as discrete to sections rather than a review of the entirety of a work. It wasn't until 2002, when TechSmith released its Camtasia screencasting software (TechSmith, 2013), that a technology was available that provided students with the opportunity to, much like in face-to-face conferencing, move with the instructor through the deliverable, both hearing and seeing the evaluation as process. A screencast could be uploaded online for access, thus eliminating bloated email attachments. The notable drawback, however, was cost; a license for Camtasia was $300 US, and unlike the Office suite, which is often offered free of charge through universities as part of a student/faculty software package, the cost for the TechSmith product would likely come out of the instructor's pocket.

In 2007, however, TechSmith released Jing, a free, limited functionality version of its screencast software (Wikipedia, May 31 2013). Jing allows for the creation of a screencast up to 5 minutes in length that can be uploaded to screencast.com (which has limited storage space available). These videos can be publicly searchable but also can be accessible by invitation or link only, which may address some privacy concerns but may not satisfy FERPA requirements at many institutions. Since Jing's release, numerous educators have theorized and tested its classroom/instructional applications, in disciplines as diverse as library sciences (Griffis, 2009),

mathematics (Hofacker & Ernie 2009), bioscience (Hope 2011), computer science (Chapman & Busch, 2009), and foreign language instruction (Harper, Green, & Fernandez-Toro, 2012). The field of technical communication is also exploring uses for this free application, as evidenced by Christopher Bartis's presentation, "SME—ME—E: Screencast Creation and Collaboration" at the 2013 Technical Communication Summit. Since Jing's debut, other free screencast applications have become available, most notably, Screencast-O-Matic, which records up to 15 minutes.

Teachers of writing—whether that writing be in composition courses, technical communication, or writing for other disciplines—have been researching Jing (and other screencast technologies) as well, as a means for offering evaluation and considerations for revision. Much of this research has involved the student perception of audio-visual feedback. For example, Szerdahelyi (2012) provided feedback to students in an Advanced Composition course using three different media: Microsoft Word comment/annotations, audio commentary, and screencasts. She then interviewed students "to better understand their reactions, feelings, opinions, and preferences regarding the modalities." Thompson and Lee (2012) studied screencasting feedback in five sections of college-level writing, asking students to complete a questionnaire at the end of the course which included the question, "Please tell me about your experience getting feedback through Jing screen capture videos on a response paper and your presentation. How did it improve your learning (or not)?" Edwards, Dujardin, and Williams (2012) conducted a study comparing preferences for screencast feedback to written feedback; they note, however, that a "weakness" of their research is that it "records student perceptions of the quality of feedback and fails to measure the understanding of feedback or application to future essay assignments" (101). This observation applies to much of the extant research: the research offers feedback on the feedback but does not evaluate the actual usability of the feedback—meaning how students make use of the feedback itself.

Teaching the Teachers through UXD Research

Instructor response may not be facilitating the acts that instructors aim for. Why? Research on the topic has typically been from an instructor perspective. Granted, with feedback, instructors are aiming to promote an analytical consideration of writing choices and their effects, with the intent that their process and product will promote student learning. Studies of feedback, as Still and Koerber (2010) put it, "have sought to determine how instructors can comment on student writing in ways that they perceive as most beneficial to their students' long-term success as writers" (p. 207). Typically, scholarship on feedback is rooted in theory, a philosophy of learning. While students are central to the purpose, their input on and response to the process is rarely researched. At best, students are asked to give feedback on the feedback; while this offers important and necessary insight into perception, self-reporting data can be misleading; as Cardello and Nielsen (2013) have noted, liking a design or workflow does not ensure that users are successfully achieving the goals of the process.

Once again, we are not our users.

Part of the challenge of both researching and evaluating instructor commentary in terms of usability or user experience is that it is a complex system. As Redish (2007) explains, this is "the work that domain experts do when solving open-ended, unstructured, complex problems involving extensive and recursive decision-making" (p. 102). Users do not solely have options, but a level of freedom in interaction that may not allow for error tolerance (which, in usability terms, would provide immediate response to and corrective suggestions to mitigate error). Quesenbery (2011) adds to this definition, noting that there may be "a complex information context, one with no single answer, where the data change dynamically or where the *best* answer may rely on other aspects of a fluid environment" (p. xiv). This complexity makes traditional task-based usability testing that values utility and effectiveness in terms of such

quantifiable data as time on task insufficient for evaluation. As Albers (2011a) asks, “How can we test usability if the sum is greater than the parts when traditional usability methods tend to focus on the parts?” (p. 6). As I approached my research design, it was with the recognition that commentary is an instructional strategy and therefore purposefully perpetuates a degree of complexity. Therefore, how could usability be evaluated?

Few studies to date have specifically researched student interaction with and comprehension of instructor feedback. Still and Koerber's "Listening to Students: A Usability Evaluation of Instructor Commentary" (2010) surveyed 54 students enrolled in four sections of one instructor's introduction to technical communication course concerning the students' perceptions of feedback and their use of it. Of the students surveyed, 12 who represented the study population were observed as they reviewed handwritten instructor feedback and revised their assignment, using think-aloud protocol (talking through their thoughts and actions while performing them), followed by completing a post-test survey and an interview. From the individual user testing, Still and Koerber found a total of 86 usability problems, with 62 of those problems being either "severely" (commentary could not be understood) or "moderately" (commentary "creates significant delay or frustration" [p. 213]) frustrating (p. 215). The most common usability problem stemmed from the instructor's use of terminology that students were unfamiliar with, with the second most prevalent problem being "circles, lines, or symbols that students claimed they could not interpret" (p. 217). Based on the surveys, observations, and interviews, Still and Koerber confirm the findings of other studies (and the suspicion of many instructors): students desire feedback that will help them to improve their grade on the assignment. However, students' lack of response to commentary is not as much a disregard for the feedback as it is confusion as to the feedback's legibility or meaning. In the conclusion to their article, Still and Koerber question if and how different feedback media may affect usability:

> For instance, the increased use of embedded electronic commenting (Yohon & Zimmerman, 2004), via word processing software such as Microsoft Word, has changed how comments are delivered, but further study is needed to explore whether this new technology for commenting has had a positive effect on the nature of the content. Is it something more usable, or is it the same kind of commenting but just digitized in call-out bubbles in the margins? Along similar lines, previous work has examined the effectiveness of recording audio feedback (Hunt, 1989; Kates, 1998; Klammer, 1973). Such commentary can be regarded as more conversational than directive, and research has been done (Still, 2006) on its effectiveness when it is embedded into assignments that students have electronically submitted. Usability testing could be a highly effective technique for determining the relative effectiveness of various mechanisms for delivering feedback from instructor to students. (pp. 226-27)

My initial goal in conducting my research was to attempt to replicate Still and Koerber's study in a comparative analysis of embedded electronic comments and screencast or veedback. My research questions were framed in terms of Whitney Quesenbery's 5Es of usability (2002). This focus was not necessarily wrong, but specifically in terms of data analysis, it could have been potentially limiting. As Christiansen and Howard (2017) argue, what is termed "usability" assumes an "accommodationist approach," meaning that usability testing focused on uncovering error in the final stages of the design process so that it could be fixed by developers and engineers. This approach can be seen as reactive rather than proactive. As Christiansen and Howard explain:

> By having specified, targeted users on the system perform "normal" tasks with the system and "think-aloud" as they performed those tasks, usability-testing

> professionals could validate whether or not the product designers' mental model for the system matched or was at least compatible with the users.' Where the users' and designers' mental models failed to match and a breakdown in the usability of the product emerged, the usability testing professional could document the problem, enabling the product's designers to address the problem by accommodating or adapting the technology to meet the users' needs or goals. (pp. 125-126)

The drive of this study is less on this accommodationist, reactive, or adaptive approach than it is on what Christiansen and Howard term a "constructivist approach," which supports proactive user analysis that "seeks to *construct users* by providing them with interpretive frameworks that give them predictive power over an interface" (128). While my research did uncover problems with usability in terms of task error, memorability, and efficiency, the findings led, in my opinion, to greater insights of how to improve the user experience (UX) in terms of satisfaction, engagement, or what Barnum and Palmer (2011) term "desirability." Given that interaction with and application of instructor commentary requires a high degree of motivation and independent action on the student's/user's part, desirability—a key focus of UX above usability and utility—is essential.

Overview of the Study

To better understand how students perceive and use feedback, I have conducted a study incorporating surveys, interviews, and observation. The participants of this study represented two populations: instructors and students. Instructors of writing, composition, and/or technical communication across the country (macro level) were surveyed, as were English 2311 instructors at Texas Tech University (TTU) (micro level). Students who were

currently enrolled in English 2311 at TTU were surveyed as well, and 16 of those students participated in user testing. Instructors nationwide were surveyed as to the perceptions and practices to determine whether there were commonalities of pedagogy and praxis with English 2311 instructors at TTU. As a subsample of college-level writing/composing learners, English 2311 students played a vital role in my research. It was from them I would learn, through surveys, of their experiences with and preferences for instructor feedback. However, the greatest insights, for me, were gained from those English 2311 students who participated in user testing of instructor feedback. The participants' willingness to be observed as they accessed and reviewed their instructor's comments—which can be as emotional an endeavor as it is a mentally taxing one—demonstrated both trust and often, a very real desire that my research would benefit them and future students. It was through direct observation that I learned that the medium of response did affect the user's experience and ability to successfully complete their tasks—but not in the ways I had assumed when I began my research.

Outline of Chapters

This dissertation is a response to Chris Anson's 2008 call to writing program administrators—and the field of composition studies—to move from "belief" to "evidence" to support claims as to effective writing instruction. Rather than rely solely upon anecdotes (aka "teacher lore") or perception, this research investigates an aspect of writing pedagogy (feedback) that has often been theorized but rarely been tested as to its actual use and application through empirical (and replicable) research.

The dissertation that follows provides an answer—of sorts—to my research questions regarding the relationships between instructors' strategies for, student reception and application of, and the medium of delivery for responding to writing.

The following chapter reviews influential scholarship concerning responding to student texts. This review includes the theories of response, research into response, and concepts of instructional design. In consideration of this review of earlier research and scholarship, chapter three provides the rationale for a UX approach, explaining the purposes and goals of user testing, and demonstrating why this approach was better suited to respond to the research questions of the proposal than other research methods. In addition, this chapter outlines the research design. Chapter four presents the results of the research. The final chapter analyzes these results in terms of the potential significance of trends with the data, as well as the potential implications of the research, presenting potential best practices for providing feedback for face to face, online, and hybrid classrooms.

Chapter II

Instructor Response to Student Writing

From the very first issue of *The English Journal* (January, 1912), the official publication of the National Council of Teachers of English, instructor response to student writing has been a concern of the profession. In that issue Edwin M. Hopkins calls "theme reading" (commenting upon and grading student writing) "the most nerve- and brain-exhausting part of an English teacher's duty" (p. 4). W. D. Lewis, in proposing a new instructional model, also in this issue, claims "we are using less red ink, too, to the infinite improvement of our eyesight and our tempers" (1912, p. 13). The term "red ink," in fact, appears in two early *English Journal* article titles: "A Composition on Red Ink" (Hitchcock, 1912), and "The Reign of Red Ink" (Barnes, 1913). These discussions of composing feedback are akin to modern ones, such as challenges to instructors concerning time and efficiency (Holley, 1924; Sommers J. , 2012); the value of focusing on higher- rather than lower-order concerns (Barnes, 1913; Hitchcock, 1912; White, 2007); and composing feedback in a way that motivates students toward substantial revision (Alexander, 1908; Still & Koerber, 2010).

Over a hundred years later, key composition concerns and questions remain similar. Granted, student compositions today are rarely physical papers but are far more often digital texts. Red ink has largely given way to embedded commentary in digital documents, often delivered through a learning management system such as Blackboard or Canvas. As educators, we consider "instructional design" and "instructional technology," "multimodality," and "learning styles" concepts that, while in use since World War II, have taken on new dimensions and uses since the rise of e-learning in the late 20th and early 21st centuries.

This chapter focuses on scholarly conversations in writing studies theory and research concerning asynchronous strategies that instructors use to respond to student texts. While other types of response (such as peer review and conferencing) are pedagogically significant and of interest to me as a scholar and instructor, they are beyond the scope of this dissertation.

Theories of Response in Writing Studies: A Historical Review

> As far back as we can trace student papers, we can see the attempts of teachers to squeeze their reactions into a few pithy phrases, to roll all their strength and all their sweetness up into one ball for student delectation. Every teacher of composition has shared in this struggle to address students, and writing helpful comments is one of the skills most teachers wish to develop toward that end. Given that writing evaluative commentary is one of the great tasks we share, one might think it would have been one of the central areas of examination in composition studies. (Connors & Lunsford, 1993, p. 200)

Connors and Lunsford's sentiments regarding composition teachers' "struggles" responding to student writing are paralleled in nearly a hundred years' worth of scholarship in writing studies. While in 1993 it may not have been a *central* area of examination, feedback has continually been, as noted earlier, an area of concern. However, the focus and purpose of response has shifted significantly in the century since the National Council of Teachers of English was established. In "Looking Back as We Look Forward: Historicizing Writing Assessment" Kathleen Blake Yancey (1999) categorizes assessment in three waves: objectivity and correctness, holisticism, and portfolio or process. It wasn't until the second wave that the role of feedback—beyond sole evaluation of grammatical or mechanical errors—became an area of research, not simply theory, in composition studies.

As teacher and learner as well as academic and practitioner, I believe that charting the development of writing response theory and practice allows for better understanding of not simply *what* was done, but *why* it was done. In other words, context is important. Though a thematic review might suffice, it would be difficult for a reader to understand ways in which the discipline has adapted its practices in light of social changes or new technologies. In many ways, what follows considers how teachers as designers of feedback have worked to make feedback more usable for students and themselves as users in an iterative process reflecting changes in student repertoires and the presumed goals of composition.

Correctness and Quantification: The 1900s to WWII

In the introduction to *Writing and Response: Theory, Practice, and Research*, Chris Anson (1989) argues that the "philosophical and pedagogical sources of conventional practice" derive from the boom in U.S. college attendance beginning in the end of the 19th century (p. 3). Correction cards and rating scales, forerunners of the rubrics used by many writing instructors and programs to this day, were developed during this time. These tools were appealing for their efficiency (class sizes were in the 55-60 student range) (Anson, 1989, p. 4), and because they made the evaluation of writing seem more objective and quantifiable (Connors & Lunsford, 1993, p. 201). Until the early 1950s, student writing was not so much responded to as an engagement with text as it was judged a flawed creation in need of fixing (Connors & Lunsford, 1993, p. 203).

There were, of course, outliers or rebels who worked to topple "the reign of red ink" (Barnes, 1913). Not all instructors attended solely to grammar and mechanics in stern, unforgiving tones, nor was all response directive rather than conversational. In 1913, Walter Barnes attacked the corrective model of feedback, blaming it for inhibiting the quality of student writing:

> I verily believe that the scolding, impatient manner in which many grade teachers correct their pupils' themes is largely responsible for much of the negative quality of the average grade composition. It is often a question of red ink versus red blood. The golden rule is: First impression, then expression; but not too much repression lest there be suppression. (p. 162)

Barnes continues to assert that focusing on grammar deprives student writing of its "naturalness," "virility," and "vigor," and Barnes argues "I believe we shall do well to quit correcting so much and to begin suggesting and inspiring more" (p. 163). Largely ignored at the time, Barnes's sentiments would be echoed nearly 70 years later by Joseph Williams in the oft-cited article "The Phenomenology of Error" (1981).

Likewise, even in the earliest years of composition as a discipline, a few scholars advocated for providing dialectical feedback that was both summative and formative. In his 1908 master's thesis *Experiments in the Application of Pragmatic Principles to the Teaching of English Composition*, Carter Alexander explains the model of response used in his case study:

> The written criticisms were almost without exception in the form of questions, that could not be answered until the student had carefully re-examined his work for himself. Great care was taken to ask questions that could not be answered by "yes" or "no" so that the student was led to form the habit of criticising his own work before he handed it in. Examples of such questions are these: "How does this conclusion help out your story" —"How do these three sentences help out your description"?—"What are you trying to do here"? "Is this what you intended to say"?—"Do you really mean this?"—"Read this as though you had never seen it before; do you easily grasp its meaning? . [*sic*] What remedy can you suggest?" (Alexander, 1908, pp. 28-29)

Here too, the above claims and strategies seem quite in line with more modern approaches, such as those advocated by Ed White (2007) and Peter Elbow (1998). In reviewing the historical scholarship of Anson (1989), Connors and Lunsford (1993), and Yancey (1999); however, it appears that the ideas of scholars like Barnes and Alexander would be, for the large part, ignored and unheeded for 40 years.

Communicating with Audiences: 1950s to 1980

Writing feedback began to change significantly in the early 1950s. The communications movement, born of WWII interests in practical and persuasive expression, manifested at the college level as communications courses (Russell, 1987). These courses brought together both writing and speech; the words that students had heretofore relegated to the page were now performed and enacted.[1] Students and their compositions now engaged with an audience beyond that of the instructor; they could witness their audience's (typically, fellow classmates') responses to their work. Scholars such as Jeffrey Fleece and Harold Collins supported extending that audience engagement to writing response, proposing that instructors provide "full-scale rhetorical comments both in the margins and at the end of papers" (Connors & Lunsford, 1993, p. 204). Collins (1954) found that students, at least initially, resisted this style of response and its corresponding effect on evaluation, preferring the more straightforward (and more easily fixable) critiques on grammar alone (as cited in Connors and Lunsford, 1993, pp. 203-204). Nevertheless, by the end of the 1950s, this rhetorical and dialectical model had become the standard for providing feedback, at least in theory rather than practice (Connors & Lunsford, 1993, p. 204).

[1] The separation of public speaking and composition in the classroom had been prompted more by organizational politics than pedagogy. In 1914 and with much acrimony, speech teachers withdrew from NCTE to form the National Association of Academic Teachers of Public Speaking, now known as the National Communication Association (Work & Jeffrey, 1989).

Throughout the 1960s and 1970s, research into and theory concerning response centered around this rhetorical/dialectical model. One study, however, seemed to refute the need for pithy, conversational feedback. Robert Stiff's "The Effect Upon Student Composition of Particular Correction Techniques" was the first completed project supported by the NCTE Research Foundation, and the findings were reported in the inaugural issue of *Research in the Teaching of English* (1967). Stiff researched the effectiveness of feedback (defined as "improvement in writing") for three different response strategies: marginal comments only, terminal comments only, and both marginal and terminal comments (pp. 55, 58). Stiff found no significant improvement in any of the subgroups; though the group which received only terminal comments showed minor improvement at an accelerated rate, this change was not statistically significant (p. 60). In his conclusion, Stiff argues based on his findings:

> Perhaps we teachers of English should now be able to occasionally return, without great remorse, a set of compositions with just a few terminal comments, or with only a few succinct marginal comments, since a full correction (both marginal and terminal) seems to have no more effect upon student composition than do what we have usually considered partial corrections. (1967, pp. 62-63)

The impact of Stiff's research in the late 1960s and throughout the 1970s seems to have been negligible in the literature; only one article (Raimes, 1978) cites the study in the decade following publication. It would not be until the 1980s movement toward employing social science methods that, if citations are any indication, Stiff's work would gain popularity with scholars in the field.

During this time, response by and large was provided as text overlaid upon text; in other words, the instructor wrote (presumably in red ink) on the student's paper. There were a few

educators, however, who experimented with using audio recordings for feedback. During the 1966-67 academic year, tape recordings were used at Bard College for commenting on student writing; Hodgkinson, Walter, and Coover, who conducted a formal study of this practice, argue in their analysis that recorded commentary made "the correction of students' themes a more meaningful experience for both the student and the instructor" (1968, p. 2). Interestingly, a factor that the researchers deemed an asset of this method—the opportunity to provide extensive and lengthy conversational commentary— is one that Stiff had argued was counter-productive, at least in text form. With regard to Hodgkinson et al.'s (1968) research, however, it is undeniable that access to the technology did create some difficulty for both teachers and students. Comments were recorded using a dictation machine, which etched the recording onto a plastic belt. The belt was then returned with the paper. The student would then take the paper and the belt to the library (the only location on campus with a playback machine) to listen to the feedback. According to Hodgkinson et al., few students in the study took issue with this, but one teacher dismissed it as "the usual form of student grousing" (p. 3). As cassette recorders became more accessible in the 1970s, other writing instructors tested the use of the technology for feedback (Carson & McTasney, 1973; Logan, 1976); while researchers often found positive results, it does not appear that the practice became widely implemented.

Ownership, Methodologies, and Technologies: The 1980s through the 1990s

In the late 1970s through the 1990s, the nature of feedback scholarship largely shifted from the theoretical and rhetorical to the empirical. While historically instructors had developed rating cards and rubrics to categorize or quantify components of student writing, this had been done to make the grading of writing seem more objective and less subjective.

This new wave of research, instead, sought to identify and analyze components of both student writing and instructor response, not to justify grades but to seek to understand various strategies and their effects on student writing. In other words, the nature of the research was not so much to develop a heuristic as it was to analyze process, practice, and product. More importantly, scholars began to use methods commonly employed in social sciences to investigate, which is somewhat unfamiliar territory in a discipline that had, for the most part, responded rhetorically and analytically. Connors and Lunsford (1988), for instance, focus on methods with their now famous study, "Frequency of Formal Errors in College Writing, or Ma and Pa Kettle Do Research." Some writing scholars became ethnographers, as evidenced by such works as Shirley Brice Heath's (1983) *Ways with Words: Language, Life and Work in Communities and Classrooms*, and Mary Louise Pratt's (1991) "Arts of the Contact Zone." In *Forming, Thinking, Writing: The Composing Imagination*, Ann E. Berthoff (1982) created a design for writing instruction using ethnographic and social science methods such as classification. The adaptation of social science methods fostered new ways of identifying and classifying components of the writing process as well. Faigley and Witte's (1981) "Analyzing Response," while notable for its findings concerning the revision practices of inexperienced students, advanced students, and expert adults, is perhaps best recognized for the coding schema developed during the research. The "Taxonomy of Revision" has been used in several subsequent studies (*e.g.*, (Daiute, 1986; Hawisher, 1987; Paulus, 1999; Wingard & Goesits, 2014) to identify types of changes various writers make when revising. As Figure 1 shows, Faigley and Witte's taxonomy parses what is specifically encompassed by lower-order concerns ("Surface Changes") versus higher-order concerns ("Text-Base Changes").

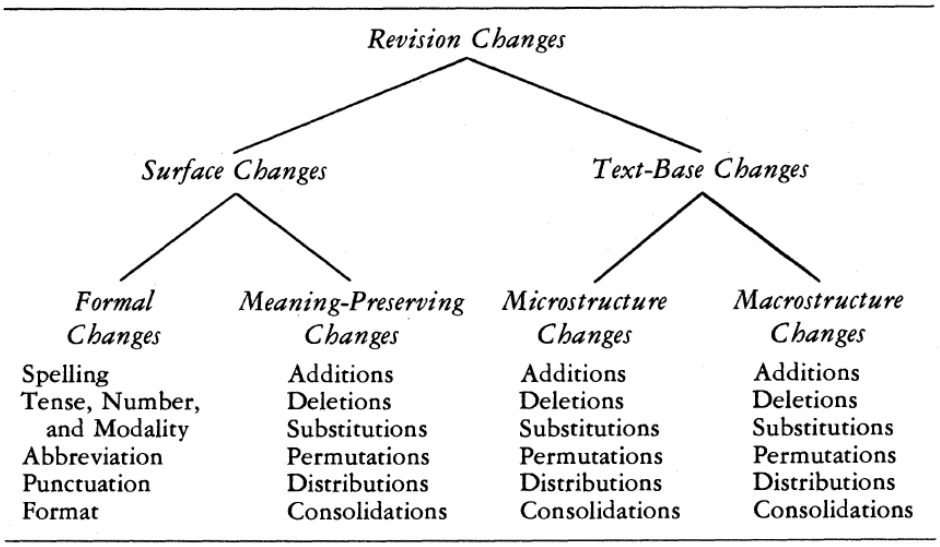


Figure 1: Faigley and Witte's Taxonomy of Revision (1981, p. 403).

Research with "subjects" also became common, particularly with regard to analyzing instructor feedback. For example, Hillocks (1982) compared the effects of three treatment conditions encompassing instruction, feedback, and revision among 278 seventh and eighth graders. Hillocks found that both brief and extended teacher comments, when employed in conjunction with either pre-writing activities or revision, led to improved student writing not simply in the revisions of one particular assignment, but in future writing assignments. Ziv (1980) conducted a case study of four college freshmen to determine the effects of different types of instructor response on their writing. Ziv asked the participants to tape-record their reactions while reviewing the instructor's comments (think-aloud protocol); students then took their drafts home and revised. For coding and analysis, Ziv created a taxonomy of feedback (categorized at the top level as implicit cues, explicit cues, and teacher corrections). She found that explicit cues were most effective for students in revision; implicit cues were at times misunderstood. Correction, while occasionally leading to just "fixing" errors, did not promote either an understanding of why a construction was incorrect or how to avoid repeating the error

itself. Furthermore, Ziv called for instructors to create a dialogue with their students "by responding to student writing not as evaluators or judges but as interested adults would react to such writing" (p. 22), and "to become more sensitive to the intentions of student writers" (p. 23).

In her history of assessment, Yancey credits Nancy Sommers' 1980 case study "Revision Strategies of Student Writers and Experienced Adult Writers" with "the first formal study of response" (1999, p. 497). While Sommers' research focused primarily on identifying and comparing the revision techniques used by two groups of differing writing expertise, as Yancey notes, "Sommers' study is based in and oriented toward recommending good classroom practice" (1999, p. 497). It is Sommers's "Responding to Student Writing" (1982), however, that proved highly influential in not only theories of writing feedback, but the methodological approaches to researching response as well. Building on research conducted with Knoblauch and Brannon (1981), Sommers reviewed the comments of 35 teachers at New York University and the University of Oklahoma on each instructor's student essays and three specific student essays; a representative number of instructors and students were also interviewed. In addition, one essay was evaluated by a computer program. What makes this research so noteworthy is that while other studies analyzed and coded instructors' responses (Harris, 1977; Searle & Dillon, 1980) or had interviewed students and teachers about feedback (Emig, 1971; Gee, 1972), Sommers brought together both strategies to rhetorically analyze the data. Rather than focusing on length or timing of feedback (as Stiff and Hillocks, among others, had done), Sommers analyzed the content and design of commented-upon essays to inform her research. Her analysis identified two problematic response practices: instructors' appropriation of student writing and generic, "one size fits all" comments (see Figure 2).

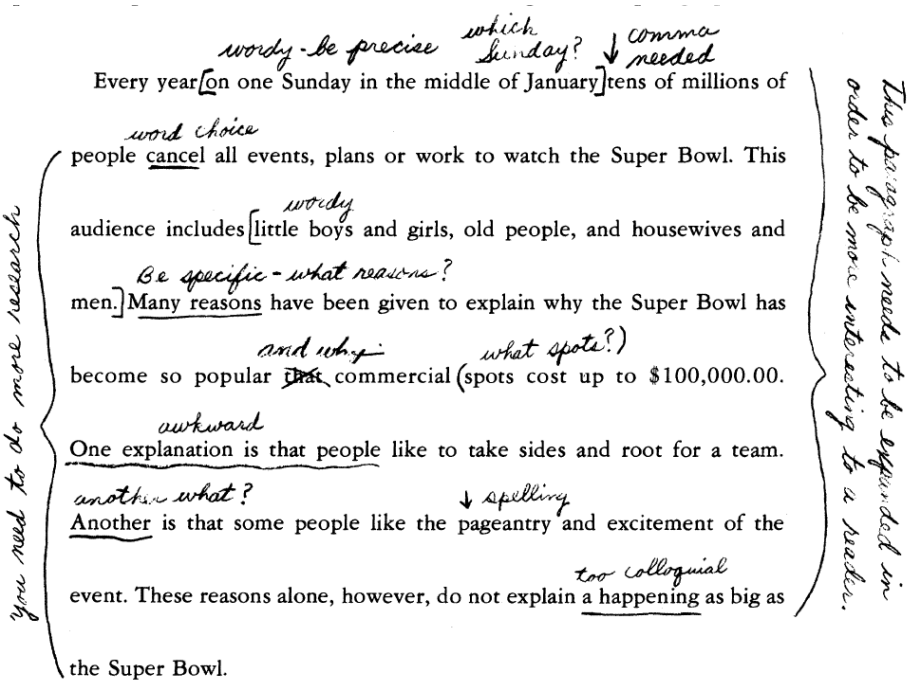


Figure 2: Example of Appropriation (Sommers N. , 1982, p. 160).

The article's images of student writing with teacher commentary may have been Sommers's most effective strategy in demonstrating the instructor "takeover" of students' compositions. Unsurprisingly, criticisms that instructor feedback appropriated student texts were echoed in subsequent scholarship. Sommers's collaborators, Brannon and Knoblauch, after reviewing the comments of 40 teachers on a student essay, stated, "they all responded in one of two ways, neither of which recognized the writer's control over choices" (1982, p. 160). In their conclusion they argue, "by responding, a teacher creates incentive in the writer to make meaningful changes. By negotiating those changes rather than dictating them, the teacher returns control of the writing to the student" (p. 166). In her case study of three undergraduate students and their experiences in response and revision, Onore (1989) aimed to 'negotiate rather than dictate.' However, she acknowledged the difficulty of rhetorical negotiation:

> The tension between, on the one hand, questions that assume writers' authority over their own writing and, on the other hand, comments designed to offer

> alternative worlds of meaning to the writer, and perhaps in the process to undermine a coherence already achieved, is acute. (p. 235)

In fact, Onore argued that for one student in her study, "Dan," negotiation undermined improvement. Dan is characterized as a "nonfluent and anxious writer who has never developed functional strategies for any sort of writing" (p. 240). Perhaps because of his difficulties with writing, he did not assume ownership of or responsibility for his texts, instead focusing on what the teacher wanted.

While many of these studies exhorted positivity, honoring the student's "author-ity," and not correcting, few provided concrete examples of exactly *how* to provide feedback in this manner. Richard Haswell (1983) tackled responding to surface errors in "Minimal Marking." Instead of correcting grammar, Haswell placed checkmarks per line (the number of checkmarks indicating number of errors); students were then to locate the error or errors in the line and correct accordingly. Responding in this way, he argues, "challenges students with a puzzle" and "engages students in an activity that comes much nearer to the very activity they need to learn, namely editing—not the abstract understanding of a mistake someone else has discovered, but the detection and correction of errors on one's own" (p. 601). To evaluate the effectiveness of this method, Haswell compared the beginning- and end-of-semester error rates in three freshman composition classes, and found a 50% reduction in such errors.[2] He advocates finding strategies for minimal marking for larger issues such as structure and organization, closing with "the best mark is that which allows students to correct the most on their own with the least help" (p. 604).

[2] A comparison with other marking techniques would help determine whether this method is truly effective, but as Haswell noted, "I have not had the heart to set up a control group to isolate this marking technique; it has been valuable enough for me that I prefer to sell it rather than to deprive any students of it deliberately" (p. 603).

Providing feedback using audio cassette recording was still a topic of research and interest. Unlike in the late 1960s and 1970s, however, the technology was much more widely accessible for students and teachers alike. Once again, those who researched the use of audio recordings were quite enthusiastic about the results—but primarily from the instructor's viewpoint. Clark (1981), for instance, subtitled his article concerning cassette feedback "An Answer to the Grading Dilemma." A primary dilemma in composition is often how to provide comprehensive yet compassionate response to students given the teacher's workload. Jeffrey Sommers (1989), in his case study of one student receiving cassette-recorded feedback, is quite positive about the benefits of commenting in this manner, but admits he focused on the benefits to the instructor and not investigated the perceptions and practices of the students in response. Yarbro and Angevine (1982) conducted a comparative study of written versus audio recorded response; while students responded positively, there was no conclusive evidence as to student improvement. Moxley (1989), as well, found that students generally preferred recorded feedback. Still, in a later survey of 419 writing instructors, he found that only 1% used taped commentary (1992, p. 24). Anson (1997) provided a positive endorsement of and how-to guide for cassette-recorded writing response; however, he anticipated that computer capabilities would likely render cassette recordings obsolete. He acknowledges that at the time of writing, "almost all students now have a cassette tape player at home or in their car" (p. 11), but notes that recorded commentary can be integrated with word processing, although not all students had ready access to computers at the time of his study. However, Anson predicts:

> Computers will eventually involve both the recording and playback of video. Microcomputers are available with tiny video cameras that record the user's face for later playback. Using such technology, a student would be able to open up a paper on a disk, click on an icon, and then both hear and see the teacher,

> whose image appears in a box at the top of the screen. Though this option may seem almost ridiculous to us now, it won't be long before the quality of images improves and their size increases. The technology will offer us something approaching a student-teacher conference. (pp. 112-113)

As Anson's comments suggest, in the midst of these discussions about how to provide feedback and adapting established technologies for pedagogy, the field was also exploring uses of computers for writing and the newly-emerging online writing environment.

Several in the field were quite optimistic about the opportunities that computers would provide. In the second issue of *Computers and Composition*, Milone wrote, "Even the most reluctant writers can become enthusiastic about composition if they have the opportunity to use a computer and word processor" (1984, p. 6). Many, like Beth Baldwin (1996), saw in online writing the opportunity to disrupt the teacher-student power dynamic and, by extension, return the ownership of texts to composers and bestow power equally to students and teachers in evaluation of those texts. Research into the use of computers for writing, however, did not always confirm the optimistic hype. Hawisher (1987), in comparing the revising processes of 20 students through multiple essays and drafts, found no significant differences between word processing and conventional methods on the quality of revision. In his review of 32 studies (including Hawisher's) concerning students writing using word processors, Bangert-Drowns (1993) theorized that using computers for writing will be more effective "*if* the tool explicitly prompts or guides higher order thinking" (p. 89) [*emphasis mine*]. In "The Rhetoric of Technology and the Electronic Writing Class", Hawisher and Selfe (1991) acknowledge the potential for using computer communication technologies to decentralize the classroom, but warn that without a conscious, reflective pedagogy concerning the use of such technologies,

"we may unwittingly use computers to maintain rigid authority structures that contribute neither to good teaching nor to good learning" (p. 64).

While some instructors experimented with digital strategies such as blogging and threaded discussion boards to disrupt power structures, few addressed ways of using technology to subvert the appropriation of student texts with feedback. Freedman, Greenleaf, and Sperlin (1987) identify a potential reason: response "is often coupled with grades and functions to justify the grade rather than to teach the student," thus "the institutional role of the evaluator frequently makes it difficult for the teacher to assume other reader roles successfully" (p. 9). Geoffrey Sirc (1989), however, argues a more probable reason: software was being developed to, essentially, automate the (primarily grammar-centric) evaluation of writing, and this automation was at the expense of pedagogy. Cynthia Selfe, too, notes that during the early 1980s and through the 1990s the discipline came down with a "strange version of professional amnesia," and used computers for grammar tutorials, grammar checkers, and electronic grading/response software (1998, p. xii). In other words, some instructors were retrofitting pedagogy and practice to the new technologies that addressed lower order concerns, instead of using new technologies to further existing pedagogical goals and addressing higher order concerns. Computers could be programmed to evaluate grammar—in some ways, a throwback to the pre-1950s goals of correctness and quantification. It would take over a decade for much of the discipline to reevaluate its use of computers. Selfe explains:

> There was no consistent evidence that they [computer programs devoted to correctness and/or automated grading] functioned to improve the quality of student writing over time, and teachers in a range of disciplines ultimately came to recognize this fact[…]Ultimately, the same lessons about writing that had provided the intellectual foundations for WAC—the focus on writing as a

> process of thinking and learning that was refined over time and through multiple drafts, on the wide range of skills and strategies required of writers, on the socially-constructed nature of writing as a medium of both thinking and communication—also came to inform faculty members' understanding that computers had much greater and wider-ranging potential as open-ended and flexible writing environments than they did as mechanical tutorial devices. (1998, p. xii)

The 1980s through the 1990s may be most significant because of a shift that was not only disciplinary, but cultural: the personal computer was slowly becoming more affordable, and "regular" people (meaning those not affiliated with the military or education) had an increasing ability to share information via networked computers. A Harris poll conducted in 1983 found that 10% of the U.S. adult population had a personal computer; 14% of that population used a modem with their systems (qtd. in (Pew Research Center, 2014). By 1995, over half of U.S. adults used a personal computer, and 14% of the entire U.S. population used the Internet (Pew Research Center, 2014). That same year, online services such as America Online (which launched in 1985) and CompuServe began offering dial-up Internet access (Sandbox Networks, Inc., 2015). The number of Internet users would climb steadily throughout the 1990s and into the 21st century. This cultural shift set the stage for the rise of e-learning and virtual learning environments. In 1995, Murray Goldberg began developing WebCT, which would become one of the first widely used educational online course systems. By the time it merged with Blackboard in 2006 (Lederman, 2005), it is estimated that it was "used every day by more than 10 million students at over 2,500 universities and colleges in 80 countries" (University of British Columbia, 2004).

The very development of e-learning environments held the opportunity for the decentralized educational spaces that many instructors were striving for with the goal of fostering strong student writing. Early adopters such as Elizabeth Tebeaux, claimed, "through effective course design that uses technology, students become active and responsible in the learning process; the instructor changes from teacher to facilitator" (1995, p. 369). Mulligan and Geary asserted "on-line, collaborative pedagogy can improve learning outcomes, including advances in critical thought and writing, because the medium requires constant writing, and encourages a self-reflective attitude that is often missing in student writing" (1999). These perspectives manifested themselves, in some ways, in the models for responding to student writing online. Hawisher and Moran (1997) contended:

> Here, the teacher's response to student work becomes part of an organic process. Each responder becomes one among many—certainly the teacher is still the teacher, but to the extent that students own their publication, the teacher becomes just another reader. The medium further diminishes the authority of the teacher's response: all responses appear in the same format and on the same screen. Off-line, there is a clear difference between peer response and teacher response: one is handwritten and the other sometimes typed; one is advisory and the other evaluative. On-line, the peer response and teacher response will look very much alike. This is yet another situation that student and teacher will have to grapple with in on-line responding. (pp. 123-124)

Some instructors, however, employed hybrid methods of response or worked with technologies that mimicked commenting on paper. Tebeaux had her distance students submit a paper copy of assignments (presumably by postal mail); following a dialogic model of feedback, the

evaluation sheet she returned to her students with their grade was, essentially, a series of questions, such as "Do your instructions fit your analysis of reader, purpose, and context?" and "Are your visual aids helpful and easy to understand?" (Tebeaux, 1995, p. 374). Joel Foreman, however, advocated for a system of "linked columns" of response (similar to the inline comments and track changes already available through MS Word) (1998) .

By the end of the 20th century, therefore, changes in culture, technology, and education set the stage for revolutionary questions in the field: what *is* composition? what is the role of digital multimodality in "the writing class"? how might and will the "paperless classroom" affect both student work and instructor response?

E-Learning, Digital Multimodality, and Ubiquity: 2000 to 2015

> Today's students are no longer the people our educational system was designed to teach[…]What should we call these "new" students of today? Some refer to them as the N-(for Net)-gen or D-(for digital)-gen. But the most useful designation I have found for them is Digital Natives. Our students today are all "native speakers" of the digital language of computers, video games and the internet. (Prensky, 2001)

In 2001, Marc Prensky coined the term "digital natives" to describe a generation that was born wired. While some might argue that his definition was premature, it is undeniable that students' literacies and expectations as users of information and technology were changing, and rapidly. Furthermore, both the notion of audience and the preferences of audiences were affected by online communication's immediacy and broad reach. Web logs (soon shortened to "blogs"), started to surge in popularity in 1999 with the launch of Blogger and its WYSIWYG interface (Blood, 2000). Individuals could publish their thoughts, ideas, and information, and

have their work available to anyone who could click a link. On January 15, 2001, *Wikipedia*, the open content, user-generated online encyclopedia, launched (Sanger, 2005). Online texts were expected to be interactive, visual, and easily scanned or read.

While the role of digital multimodality had been a longstanding area of interest within certain sub-fields in the discipline (such as Computers and Writing) the concept and act was far from being explored in the mainstream. Granted, there were tentative forays. In the early 1980s, certain scholars influenced by works such as Alvin Toffler's *The Third Wave* (1980) and Walter J. Ong's *Orality and Literacy: The Technologizing of the Word* (1982) questioned the ramifications for "writing" studies. Welch (1981), for example, explored the role of Toffler's "prosumer" (the individual who can be both a producer and consumer of video and audio as well as text) in teaching composition. However, in the 21st century, such questions and discussions came to the forefront, perhaps quite notably in the 2010 exchange between Doug Hesse and Cynthia Selfe in the pages of *College Composition and Communication*. In "The Movement of Air, the Breath of Meaning: Aurality and Multimodal Composing" (2009), Selfe argues that the historical privileging of writing over aurality "was intimately tied to the emerging influence of writing as the primary mode of formal academic work, of commercial exchange and recordkeeping, and of public and professional expression" (Selfe, 2009, p. 625). Students were analyzing the artifacts of digital culture, but their "composition assignments, for the large part, continued to resemble those of the past hundred years" (p. 639). Selfe proposed that compositionists "acknowledge, value, and draw on a range of composing modalities—among them, images (moving and still), animations, sound, and color—which are *in the process of becoming increasingly important to communicators*" (p. 642).

In his response to Selfe's article, Hesse posed two questions that essentially encapsulated much of the debate in the discipline: "Is the curricular space that our field inhabits

'rhetoric/composing' or is it 'writing/composing'?" and "Whose interests should the composition class serve?" (2010, p. 603). Hesse does not argue for specific answers, but rather explores implications of either definition of the curricular space as well as the repercussions for numerous stakeholders. Selfe, in responding to Hesse, aligns with "rhetoric/composing":

> A literacy education focused solely on *writing* will produce citizens with an overly narrow and exclusionary understanding of the world and the variety of audiences who will read and response to their work […] although writing retains a privileged position, literate citizens, increasingly, need to make use of *all* semiotic channels to communicate effectively among different groups and for different purposes. (2010, p. 606)

Selfe notes as well that composition curricula, as with education in total, should encourage consideration and analysis of different ideas and means of expression. Not only should students explore new modes of composing, expression, and rhetoric, but, Selfe challenges, faculty should serve a role models, "by practicing with different modalities of expression that may be unfamiliar and difficult but increasingly expected and valuable in different twenty-first-century rhetorical contexts both in and out of the academy" (p. 608).

While the discipline still debated (and to some extent, still debates) the role of multimodality in the composing classroom, the medium for responding to student texts— multimodal or otherwise— was, in many ways, unchanged. When Andrea Lunsford and Karen Lunsford (2008) replicated Robert Connors and Andrea Lunsford's 1998 study of formal error, they were surprised that few of the teachers who participated used computer technologies (such as Microsoft Word's commenting function) to respond to student writing. Approximately 85% of the papers submitted were marked in pen or pencil, though some included typed end comments. In their study of the usability of instructor feedback, Still and Koerber (2010) worked

with physically marked papers, acknowledging that digital and audio technologies were available for response, but implying that these technologies were not, as yet, widely used.

Even in the realm of online writing instruction (OWI), many of the technologies available and recommended for instructor response were ones that simulated the act of writing on a student paper. Foreman (2002) discussed the use of inline commenting functions and track changes available through MS Word. This digital option, however, as far as design, differed little from traditional paper commentary, except that the typed notations (at least the words themselves) could be easier to decipher than an instructor's handwriting.[3] Others, such as Popyack et al. (2003), and Plimmer and Mason (2006), went as far as to propose using so-called "electronic ink"—using a stylus to "write" comments, underline, cross out—to mimic the physical/tangible process of response. In practice, it was possible that, as Still and Koerber questioned at the end of "Listening to Students: A Usability Evaluation of Instructor Commentary" (2010), embedded electronic commentary (along with electronic ink) might be "the same kind of commenting but just digitized in call-out bubbles in the margins" (2010, pp. 226-227). While Still and Koerber were making this statement to recommend further research on the usability of different modalities of response (a challenge that I have responded to), the implied question was clear: is digital feedback simply a replication of handwritten feedback, with pixels instead of pencils?[4]

Some evidence supports that individuals and entire writing programs were exploring the opportunities uniquely afforded by the online environment. In "Computerizing College Composition," Joel Foreman (2002) proposed using existing web technologies to reduce the

[3] Students' frustration with making sense of instructors' arrows, circles, and underlines is documented in Still and Koerber's usability study of instructor feedback (2010).
[4] A respectful riff on Dennis Baron's "From Pencils to Pixels: The Stages of Literacy Technology" (1999).

'drudgery' of evaluating and grading student work. His vision included integrated grammar checkers, plagiarism detectors, hypertext error markup that directed the student to an online handbook, and workflow management. The goal was to automate as much of the instructor's work—from grade tracking to feedback—as possible. Foreman argues "we can begin to imagine the kind of economies that might be produced by a writing support system that reduces instructor labor (or refocuses it on high-yield learning activities) and improves instruction." Foreman's vision has, of course, become realized in VLEs such as Blackboard and Canvas, but the effects on labor or quality of instruction are questionable.

In 2002, Texas Tech University's First-Year Composition program adopted a customized course management system called TTOPIC (for Texas Tech Online-Print Integrated Curriculum)/ICON (for Interactive Composition Online) (Wasley, 2006). TTOPIC/ICON proved both revolutionary and controversial, specifically with regard to responding to student writing. The fully hybrid system, which has evolved at TTU and is currently referred to as Raider Writer, employs a system of anonymized distributed assessment. Graders do not know whose work they are reviewing, and students do not know who has reviewed their work (Lang, 2015). The program, which uses a common syllabus, employs classroom instructors (who teach an 80 minute section of the class once per week and grade) and document instructors, whose sole job is grading. According to Fred Kemp, the primary designer of the system and former TTU WPA, this model serves not only the practical needs of a mainly graduate instructor labor pool, but fulfills several pedagogical goals, notably, that writing—not personality, not subjective whims, not instructor quirks, and not the writer—is what is evaluated (Kemp, 2005). Texas Tech's FYC web page touts the "quick and objective evaluation of writing" with major assignments being

evaluated by two instructors (Department of English, Texas Tech University, 2015).[5] Compositionists at Texas Tech have argued additional benefits. Rich Rice, former associate director of the program, notes that the system allows more writing to be assigned and responded to, because "How do students learn how to write better? By writing" (Rice, 2007). Susan Lang, current director, notes that student evaluations of the class improved since the adoption of the system (2010).

However, Texas Tech's FYC feedback model has not escaped criticism. Moxley (2008) referred to the system as a "panoptICON," asserting that "all agency here resides in the delivery system to the detriment of the crowd (i.e., the instructors and students) who could, given the chance, help develop and revise the pedagogy" (p. 190). A 2006 *Chronicle of Higher Education* article noted that the system was not universally embraced on campus; opponents argued that it was factory model of production, dehumanizing, and impersonal (Wasley, 2006). Shirley K. Rose, then president of the Council of Writing Program Administrators, stated ICON was "going too far"; Deborah H. Holdstein, chair of Northeastern Illinois University's English department at the time, condemned it for its inherent 'suspicion' of teachers as well as downplaying, as the article author notes, "a teacher's ability to inspire and reward students' intellectual development," questioning if it were solely technology for technology's sake (Wasley, 2006). Kemp, who fielded many of the attacks on TTOPIC/ICON, admitted that one major critique stemmed from the belief that "'something' happens personally between teacher and student in the self-contained classroom that will be diluted or eliminated when the assignments and evaluation are spread across the system of 2,600 students. Something will be lost" (Kemp, 2005, p. 114). Kemp termed this the "psychology of loss," and argued that such feltsense was based

[5] If the two instructors' grades are within eight points of each other, the grades are averaged; if the range is greater than eight, a third grader reviews the student's submission (Wasley, 2006).

more in teacher perception than student experience. He challenges readers (instructors and WPAs) to reframe their perceptions and consider the potential benefit to learners:

> But if we are to escape essentially nineteenth-century models of instruction and take full advantage of the new information management and distribution capabilities of the Internet, as most other professions have, then we must look at the deep-seated attitudes of our teachers and compare their hopes and fears to the advantages new processes can provide our students. (Kemp, 2005, p. 114)

Later criticisms of TTU's feedback model were based less on the pedagogical foundations that led to the development of TTOPIC/ICON and more on the system itself. Vicki Hester, who had worked as a classroom instructor, a document instructor, and assistant WPA at TTU, claimed "During my 3 years at TTU, I noticed that the shifting concern toward pragmatics and organizational thinking […] included a pragmatic shift in pedagogy. In the beginning of each semester, TOPIC and ICON became the teaching subject" (Hester, 2007, pp. 124-125). Hester also argued that the feedback received from graders was inconsistent and at times conflicting. Hester (2007) and Gouge (2009) both charge that the model conflates objectivity with fairness. Susan Lang (2010), however, notes that the system is iterative and is constantly reassessed and reevaluated based on input from all stakeholders. For example, the 2007-2008 transition from TTOPIC/ICON to Raider Writer enabled the creation of grading groups and also allowed for in-text, rather than purely holistic, commentary (Lang, 2015). While the methods used by Texas Tech remain controversial, it undeniably stands as one of the most ambitious and innovative uses of technology to achieve pedagogical goals.

One of the explicit critiques of the TTU system—that it was taking the humanity out of the humanities—was being echoed by members of the profession with regard to the online

learning environment as a whole. Articles such as “Building Learning Communities in Online Courses: the Importance of Interaction” (Swan, 2002), “The Teacher’s Role in Developing Interaction and Reflection in an Online Learning Community” (Maor, 2003), and “Paying Attention to Adult Learners Online: The Pedagogy and Politics of Community” (Blair & Hoy, 2006) reflect research into strategies to foster community and engagement in online instructional spaces. This focus on community or a sense of “connection” led to renewed interest in using audio and/or video for feedback, in the hope that it would bring faces and voices to what was otherwise a text-based (and theoretically isolating) environment.

In from the field of instructional design, Ice, Curtis, Phillips, and Wells (2007) questioned whether audio feedback would provide greater benefit to students than text-based feedback in an online environment. Their mixed methods approach included end-of-semester surveys, semi-structured interviews, and document analysis. Ice et al. found that students receiving audio feedback felt a greater sense of involvement in the course, believed that their instructors “cared,” and thought they better understood and retained the course material. Benefits were not merely perceptual. Researchers also found that students receiving audio feedback were more likely to demonstrate higher order thinking and problem-solving strategies in their final projects. Oomen-Early, Bold, Wiginton, Gallien, and Anderson (2008), for instance, rooted their study of asynchronous audio communication in online classrooms in the perception of “the online classroom [...] as lacking the human ‘connectivity’ of face to face courses” (p. 267). Their study surveyed student attitudes concerning receiving audio feedback from instructors; while over half of the respondents disagreed with solely using audio, 71.8% believed that it helped with content comprehension, and 80.2% stated that it kept them engaged, a percentage that was also closely in line with the perceived benefit to the instructor-student relationship (p. 270). Jeff Sommers (2012) argued that perceptions of engagement or relationship are not solely due

to intonation (hearing the teacher's voice), but that as a medium, recorded commentary is more conversational. Analyzing the written and recorded commentary he provided to his own students, Sommers noticed that his audio feedback had a greater frequency of comments that were retrospective (referring to "previous shared experience in the writing course"), synchronous (referring to "the teacher/reader's current reading experience in responding to a student's text"), and anticipatory (referring to "future shared activities in the writing course"). Sommers theorized that audio feedback does not simply tend toward more words (he found the word count for audio commenting at least double that of written), but that it also covers a greater depth.

In the introduction to "Talking to Students: Embedded Voice Commenting as a Tool for Critiquing Student Writing," Still (2006), argued that recorded commentary "better approximates the open, direct conversation of the student-teacher conference, which, for me, offers the ideal environment for discussing writing with a student" (p. 461). While noting the potential benefit to online students, he focused his research on the use of embedded audio comments in MS Word for onsite classes. Like Oomen-Early et al., he found that that most students preferred a combination of voice and written commentary.

While some were revisiting audio feedback, others were looking to screencasting, or "veedback," as an option. Anson's 1997 predictions as to video commentary had come about with a bit of a twist; instead of a student opening up a document and seeing the teacher in a video box in the corner of the screen, a student could open up a video file and have a simulated experience of the teacher moving and talking through the document. Screencasting, although available since at least the mid-1990s (McCracken, 1994), had long been either cost- or bandwidth-prohibitive for most video creators and audiences. By 2005, over half of the U.S. population aged 18-49 had a broadband subscription in the home; by 2009, that ratio would

increase to nearly three-quarters of the population (Pew Internet & American Life Project, 2009). Downloading and/or streaming larger files, as would be found with video, became less of a barrier to users. In 2002, TechSmith released its Camtasia screencasting software (TechSmith, 2013), which could be uploaded online for access, thus eliminating bloated email attachments. The notable drawback, however, was cost; a license for Camtasia was $300 U.S., and unlike the Office suite, which is often offered free of charge through universities as part of a student/faculty software package, the cost for the TechSmith product would likely come out of the instructor's pocket. In 2007, however, TechSmith released Jing, a free, limited functionality version of its screencast software (Wikipedia, 2013). Since Jing's debut, other free screencast applications have become available, most notably, Screencast-O-Matic, which records up to 15 minutes. While the screencasts can be uploaded online and hyperlinked within response files (which can bring up security, privacy, and FERPA concerns), they also can be uploaded to virtual learning environments (such as Blackboard and Canvas) and housed within the system.

Compositionists and writing theorists have researched using screencasting for feedback as well. Studies to date indicate a changing focus in feedback research: an analysis of students' perception of the process over assumed ease for instructor (Silva, 2012; Vincelette & Bostic, 2013). Szerdahelyi (2012) provided feedback to students in an Advanced Composition course using three different media: Microsoft Word comment/annotations, audio commentary, and screencasts. She then interviewed students "to better understand their reactions, feelings, opinions, and preferences regarding the modalities." Thompson and Lee (2012) studied screencasting feedback in five sections of college-level writing, asking students to complete a questionnaire at the end of the course which included the question, "Please tell me about your experience getting feedback through Jing screen capture videos on a response paper and your presentation. How did it improve your learning (or not)?" Edwards, Dujardin, and Williams

(2012) conducted a study comparing preferences for screencast feedback to written feedback; they note, however, that a "weakness" of their research is that it "records student perceptions of the quality of feedback and fails to measure the understanding of feedback or application to future essay assignments" (p. 101). Their statement applies to much of the extant research: the research offers feedback on the feedback, but does not observe and analyze how students make use of the feedback itself. An exception to solely perceptional research on screencasting, however, is Moore and Filling (2012), whose study analyzed student opinions about screencast feedback, the foci of the feedback provided, how students applied the feedback, and whether this had any effect on improvement in revision. Of the 45 students who participated in the study, all but two of the students (one of whom did not revise) demonstrated improvement.

Looking Forward

> We ought not to assume the role of editor for the student (marking every error is a common mistake, leading to student frustration or apathy in the face of too much red ink), nor ought we tell the student what the paper should do. We should rather express any problems we perceive in the paper, point out the questions that the paper raises in our minds, and ask the writer to attempt to resolve these problems. (White, 2007, p. 56)

Since the 1950s, the disciplinary stance on writing response has not changed: respond to the text as a reader, and as Peter Elbow (1983) argues, be a coach, not a judge. While issues of grammar and mechanics can be noted, they should be addressed in such a way as not to divert the writer from communicating his or her message or information. What has changed, however, is that some are actively questioning whether instructors are successfully communicating these ideas in the very medium in which they are presented. In other words,

some wonder if writing response is best achieved in written form. Scholarship concerning multimodality, instructional design, and theories of learning styles may provide potential answers to such questions.

Looking to feedback's correlative genres of documentation and instructions, one notes that solely text-based versions of these genres have declined in favor of visual, and often video, media. Why? The argument can be made that two factors are at play: one, the increased ease and cost-effectiveness of creating and disseminating visuals and video online; and two, multimodal approaches can provide more interesting and more productive learning experience (Remley, 2014; Swarts, 2012). Swarts (2012) argues that the medium of video allows for the more effective tactic of demonstration (concurrent doing and explaining) as opposed to doing or explaining alone.

Multimodal approaches to instructor response may better appeal to the multisensory ways that individuals respond to and process information. Traditional (written) feedback may only appeal to certain learning styles. Fry and Kolb (1979), Felder and Silverman (1988), and Garner (1983/2011), among others, have put forward compelling arguments concerning the benefits of appealing to student learning styles (or, as Garner terms them, "intelligences"). Research in neurobiology (Kraemer, Rosenberg, & Thompson-Schill, 2009) suggests a link between self-reported learning styles and cortical activity. Multimodality, as it is multisensory, may offer opportunities for engagement and cognition among a more diverse range of learners than solely text-based response does.

As the field looks forward, it is increasingly challenged to reevaluate its very definition as (alphabetic) writing studies, considering that the rhetoric that engages and moves many audiences is not solely based in words alone. There is, with some, a suspicion that responding to student compositions (using the term to encompass multimodal as well as solely alphabetic

texts) could be improved by rhetorical acts that recognize the student as both audience and users of response. Such rhetorical acts may involve multimodality as a means of engagement and to further comprehension. These rhetorical choices, as well, must account for the audience's medium of access, as mobile and touchpad technologies increase in popularity and use. As instructors of composition and rhetoric, it is vital that we practice what we teach.

While the scholarship reviewed in this chapter provides history, content, and context for the development of feedback theory and practice, it also brings to light areas in which research is insufficient, namely, the relationships between instructors' strategies for, student reception and application of, and the medium of delivery for responding to writing.

The chapter that follows provides the research rationale and design I developed to attempt to better understand these relationships.

Chapter III

Research Rationale and Design

In the previous chapter, I provided an analysis of the existing scholarship on responding to student writing. The scholarship, while substantial, has often been theoretical rather than empirical. Empirical research into practice has generally focused on student perceptions concerning feedback. Perception, while an important component in the evaluation of the student/user experience, is in and of itself insufficient for evaluation. As Cardello and Nielsen (2013) note, the user's sense of satisfaction (or dissatisfaction) with a product or workflow can have little relation to whether the user is able to achieve his or her goals with that product or workflow. Simply stated, "pretty," "cool," or "fun" is not necessarily usable.

To gain a better understanding of what strategies in providing feedback are most useful to students, I therefore ask the following:

- How are instructors currently providing feedback to students (what media, content, and style)?
- What experiences with and expectations for feedback do students have?
- How do students typically interact with feedback?
- How might the medium of the feedback impact its usability (effectiveness, efficiency, engagement, error tolerance, and ease of learning for students), and why?

This chapter provides both the theoretical basis for my approach to responding to these questions (the "why") and the methods I have employed to do so (the "how").

Methodology

Research into student habits, responses, and approaches to teaching methods (or methods of feedback), especially in the field of composition and rhetoric, has typically encompassed specific methodologies: case studies, ethnographies, and self-reporting research (e.g., questionnaires, surveys, and interviews). Each of these methodologies has merit in a given situation, but for the purposes of this study, would not on their own provide sufficient data. For example, a case study, such as that conducted by J. Sommers (1989) to research the effectiveness of audio commentary, offers a close analysis of the activities and responses of one individual or group (in Sommers's study, a woman named "Faye"). While Sommers's findings are provocative, they are individualized and quite specific, as the findings are based on one participant whose response to the audio commentary may or may not have been indicative of that of a more general student population. Ethnographic approaches, such as those employed by Dannels and Martin (2008) in their study of feedback in design studios, provide particular insight into communities or cultures (in this instance, architectural design programs); in the case of Dannels and Martin's research, that insight was to the construction of genre within a discourse community. Ethnography, however, looks at a culture in a context; the goal is not as much to analyze the effectiveness of a medium as it is to analyze the culture, its norms and expectations, as it exists—not through the addition of new or potentially unfamiliar technologies.

As noted earlier, much of the current research into feedback has been in the form of self-reporting methods: surveys, interviews, and questionnaires. These are excellent sources of perceptual data (how a participant may feel about or towards an issue or situation), but on their own, do not indicate how effective, efficient, and error-tolerant feedback may be, only the respondents' beliefs and impressions. These perceptions are both highly subjective and may be

invalid due to insufficient information. For example, in Edwards, Dujardin, and Williams's (2012) study of written, audio, and screencast feedback, participants were asked to identify their learning styles, which, understandably, may impact their receptiveness to different media for feedback. One respondent stated, "I don't know what kinesthetic learning is so cant [*sic*] answer next question but I am not good with listening!" (p. 123). Furthermore, the researchers themselves acknowledge that the self-reporting data alone did not determine whether the students actually understood the feedback or could apply it (p. 101).

As a mixed-methods approach, user experience (UX) research provides a framework for understanding how representative users respond to, interpret, and apply information, taking into consideration such factors as experience, environment, and engagement. Schumacher defines user research as "the systematic study of the goals, needs, and capabilities of users so as to specify design, construction, or improvement of tools to benefit how users work and live" (Sauro & Lewis, 2012). From my perspective, it is the philosophy inherent to usability that is its greatest asset: the central focus is on the needs and expectations of the user. Gaining insight into the user's experience is more than identifying the problems that a user may encounter when trying to perform a task (observation and error severity heuristics); it is also learning, through strategies such as Talk-Aloud Protocol (TAP) and interviews, what may enrich or improve the user's experience, make the user's process more effective, or increase the user's satisfaction. To better understand both users and their experiences, a variety of data are collected, with a key component being observation of representative users performing representative tasks or completing processes.

The key data collected during observation, however, should not be reduced to a simple quantification of information such as time spent on a task, error severity and frequency, or mouse clicks. Beyond usability, evaluating the user experience encompasses rhetorical analysis.

Redish and Barnum (2011) argue that in the past 30 years, usability has evolved from a focus on testing (task-based) to investigating the wider realm of user experience (UX) (p. 94). This shift is significant, as it brings to usability the rhetorical analysis —considerations of audience, purpose, and context—that has long been a practice of technical communicators. As Redish and Barnum state:

> The basic tenet of technical communication is user analysis. Everything starts with the end user. Frequently, the technical communicator is *the* person in the development process who focuses on the end user. Technical communicators see themselves as the user's advocate. And, traditionally, it is the technical communicator who shoulders the responsibility of making sense of a confusing or complex feature or interface. (p. 95)

My research questions and goals are specifically rooted in the expectations and needs of the users of feedback while considering the broader context of use. In other words, I am looking to ascertain how students perceive and use instructor commentary; to do so, I must understand the goals and practices of the instructors who are responding to student texts, how students are engaging with instructor response, and whether there are individual factors (such as learning styles) that affect that engagement. This user experience focus is at the heart of usability as well as technical communication.

So what would make feedback usable for students? Applying Quesenbery's (2002) definition of usability to instructor commentary, usable feedback is:

- **Effective**: Major points—both criticisms and praise— are clear to students. Students can distinguish between higher and lower order concerns and prioritize accordingly.

- **Efficient**: Students have sufficient information concerning their writing without information overload. Feedback does not require repeated review (e.g., scrolling through either video or pages) to develop a revision strategy.
- **Engaging**: Students feel satisfied with the feedback provided (even if some or much of the feedback is negative). Students feel that they can successfully develop a revision strategy.
- **Error Tolerant**: Students have a clear and accurate understanding of the content and the concepts of feedback; if there are misunderstandings, students will be able to identify these events and adjust accordingly, if not initially, in the development of the revision plan.
- **Easy to Learn**: As feedback can be considered both a genre and a type of interface, students should be able to learn how to navigate and comprehend feedback—regardless of medium— with ease.

As a teacher, I opted for Quesenbery's "5Es" for a specific reason: terming what is normally called "Satisfying" as "Engaging." The concept of satisfaction could potentially be conflated in this context with the student's satisfaction with their grades, as a high grade on an assignment is understandably a student-as-user's goal. However, this satisfaction is less on the usability of the instructor's comments at the pre-revision stage and more on the potential for grade improvement with revision. In contrast, engagement implies a dimension of investment, interest, and comprehension, with a sense of satisfaction that the instructor's commentary provides guidance and instruction that (should the student chose to apply it) will lead to a successful revision.

Whereas usability methods have been typically applied (especially in interface design) to distinct, concrete tasks (e.g., requiring a user to navigate to a certain part of the site, find

specific information within a text, or assemble a product by following instructions), usability specialist Janice "Ginny" Redish notes that usability testing also has merit in evaluating "complex systems" (2007). Tasks for complex systems are typically not as easily defined as they are for more basic usability testing. According to Redish, complex systems may encompass situations for which, in part:

- there may be too much information, or the information may be incomplete;
- analyzing the information and developing strategies to act upon the analysis are "cognitively very burdensome" (p. 103);
- there is no way to know at the time of analysis whether the result is right or wrong; or
- time may be critical.

A student's analysis and application of instructor feedback can be seen as part of such a complex system; students may be overwhelmed by the amount of commentary received or feel that feedback in incomplete, as it references, for example, grammar terms and guidelines with which the student is unfamiliar. Because instructors often use the feedback as a tool for learning and revision, many refrain from saying, for example, "do this," instead asking a student to consider tone, audience, etc. in light of purpose; students are expected to critically analyze the information and make, at times, difficult decisions without directions so much as suggestions. Thompson and Lee (2012) liken this technique to an Easter egg hunt, in which students are given clues—but will students know if they've found an Easter egg (and gotten it "right")—or something else? And of course, time is critical for students and for instructors. The work of the course must be completed within a confined time and space (typically 14-16 weeks on the semester system), with smaller chunks of time allotted for each assignment and revision. While

this may not be “life or death” critical, many students tie in their grades to their academic and future professional careers, in ways that grades become a source of constant anxiety.

Methods

To better understand how students perceive and use feedback, I designed my study to integrate surveys, interviews, observation, and the collection of artifacts. The participants in this study represented three populations: instructors of writing, composition, and/or technical communication across the country; English 2311 (Introduction to Technical Writing) instructors at Texas Tech University; and students currently enrolled in English 2311 at Texas Tech. My reasons for choosing English 2311 for the population for user testing were, in part, due to convenience as well as particular aspects of the course as it was then designed. First, the course in question is a writing/communication course, so students receive feedback on their written work. Second, while instructors had some leeway with course design, specific genres (including job application materials, instructions, and proposal) were curricular requirements, meaning that there was a level of cohesion with assignments across sections. Third, all English 2311 classes employed a version of a course-specific grading rubric; student work across all sections was evaluated according to the same, specific criteria. Finally, course instructors are required to have taken English 5366, Teaching Technical and Professional Writing, or its equivalent (coursework or related experience). English 5366 includes instruction on the evaluation of assignments; instructors will have a similar foundation as to evaluation strategies.

While this seems to be quite a large and diverse group, each population represented significant stakeholders in the feedback process. Instructors provide feedback with the goal of helping students to improve their communication skills; their focus is less on quick fixes, but on offering students insights into analyzing and applying strategies based on the communication situation. Instructors’ goals—focusing on a learning experience—may differ from those of

students. Students are the users of this commentary. They may have markedly different goals from instructors; notably, students are often concerned with grades. Their experience, personal goals, and perceptions as to feedback ultimately determine both its usability (the 5Es of Effectiveness, Efficiency, Engagement, Error-Tolerance, and Ease of Use) (Quesenbery 2001) and the quality of the overall user experience (UX), which includes utility and usability, but has a greater emphasis on enjoyment and desirability. The survey of English 2311 students provided insight into the emotional and perceptive dimensions of UX; user testing of a subset of that population offered a more focused evaluation of feedback utility and usability.

The goal of this research was discovery. The study as designed had acknowledged limitations, namely, that the findings from researching the practices of instructors and students from one course at one university cannot be generalized to all instructors and students at all institutions of higher learning. Approval for this research was requested from and granted by Texas Tech's Human Research Protection Program and the English 2311 Program Director.

Instructors nationwide, instructors of English 2311 at Texas Tech University (TTU), and students currently enrolled in English 2311 at TTU provided important insights as to the practices, uses, application, and overall experience of instructor response. In developing this research design, a persistent concern was determining an appropriate sample size. As Koerber and McMichael (2008) note, the field of technical communication does not have a consistent language for qualitative sampling methods, and furthermore, there is no "magic number" for determining sample size in qualitative research.

In addition, I acknowledge that this specific study is exploratory in nature. Ideally, the initial research design would have been the research reality, but several factors influenced how the study could be conducted. To gain approval from TTU's Human Research Protection Program, aspects of the initial design that would have required instructors' knowledge of

student participation had to be reworked or removed so as to protect student confidentiality. A comparative evaluation of different feedback media was not possible due to the low rate of response for that option. Statistical significance could not be achieved in any area of the study: for the national instructor population, the *n* is unknown; 384 respondents would have been needed to achieve a 95% confidence level with a 5-point margin of error. With TTU 2311 instructors, the population is so small that all would have needed to participate. As approximately 30 sections of ENGL 2311 run each semester, the student population for that course averages 580, which would require an *n* of 231 for 95% confidence and a 5-point margin of error.

Data was collected from surveys, observation (using talk-aloud protocol), and interviews. In addition, written artifacts reviewed and created during observation provided an additional data source. Using these methods with these populations ensure that I had multiple data lenses through which to view and consider each research question. Figure 3 provides an illustration of how the methods, at minimum, provided sufficient data sources for triangulation. The types of data collected depended upon the population. The sections below detail each population's contribution to the research, the rationale behind recruitment and sampling, and the research methods employed.

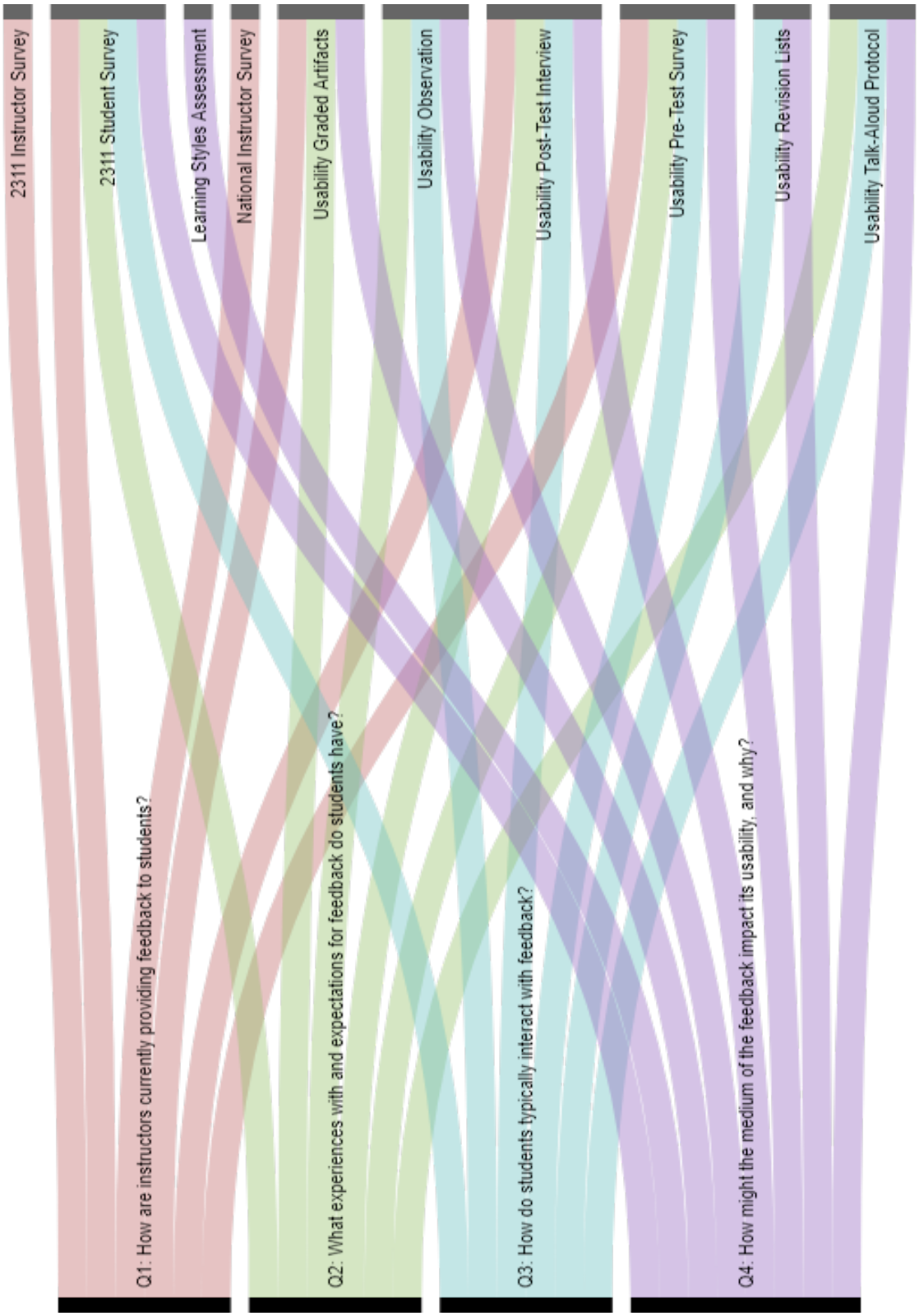


Figure 3: Alignment of Methods to Research Questions

Instructors of writing, composition, and technical communication across the nation

The scholarship concerning the delivery methods and media for instructor response is filled with case studies of surveys concerning specific technologies, essays on trial and error, and suggestions of techniques to streamline the response process. What little of the research had indicated was the medium of delivery in terms of standard practices or trends. Lunsford and Lunsford's (2008) study of formal error (data collected in 2006; published in 2008) found that only about 15% of the instructors who participated used computer technologies to comment. At that time, few of the most widely used learning management systems had the capabilities to manage more than assignment file uploads. Moodle did not have an option (in the form of an add-on) for inline commentary until 2012 (Moodle, 2013). It wasn't until 2013 that Blackboard released Service Pack 12, which enabled inline grading for assignments (Blackboard, Inc., 2016). There is scant research as to what extent instructors are currently hand writing comments on printouts, embedding digital comments in Word or Acrobat, using embedded commentary in a learning management system such as Blackboard or Canvas, attaching digital audio feedback to submissions, or using veedback. As these factors contribute to the user experience for students, a sense of what a more general population of students may encounter during their courses in composing aids in understanding the broader landscape. My practical consideration was that the institutional culture of Texas Tech in general and the ENGL 2311 program in particular might not engage in the same practices of other institutions and programs. Texas Tech has strongly promoted the use of Blackboard as part of its e-learning initiative and drive to ensure compliance with Section 504 of the Rehabilitation Act (which requires that educational materials are accessible for students with disabilities).

A nationwide survey of writing instructors offered a point of comparison. In addition to questions concerning the medium/media of feedback, the survey queried instructors' opinions

as to time spent creating feedback, how they perceived it to be received by students, and how well they believed students could apply it. Questions as to demographics were multiple choice; respondents were able to rate practices and preferences according to a scale (for the survey questions and results, see Appendix A).

Participants were recruited through posts to professional listservs such as WPA-L (the Council of Writing Program Administrators) (WPA-L@asu.edu), ATTW-L (the Association of Teachers of Technical Writing) (attw@interversity.org), and TechRhet (techrhet@interversity.org). These listservs specifically cater to instructors of writing at the college level. The listservs both allow and encourage requests for survey participation related to practices and philosophies concerning composition, technical communication, and rhetoric. In addition, recruitment flyers were distributed at the ATTW Conference and the Convention of the Conference on College Composition and Communication (CCCCs), which met in mid-March 2015 in Tampa, Florida. These conferences provided designated areas for distributing handouts related to CFPs, publication announcements, and requests for participation in research. No permissions were required by the event coordinators for distributing these materials.

The major concern in analyzing and reporting the results of the survey was that of statistical significance. Membership rolls or even numbers for the listservs are not openly available, so a response rate could not be calculated. Based on observation of frequent posters to the listservs, there is considerable overlap in membership, especially among WPA-L and TechRhet. In addition, those who subscribe to these lists or attend ATTW and the CCCCs are themselves a subset of the population of college-level writing instructors. Given the increased reliance on adjunct and graduate labor in this field, time constraints and access may have affected participation by a truly representative sample. However, the most practical (and

hopefully fruitful) means of recruitment was through professional listservs and two of the largest professional conferences for instructors of writing and technical communication.

English 2311 instructors at Texas Tech University

While the national landscape offers insight into the potential ranges, or trends, in instructor response practices, the main focus of this study is on the users themselves, more specifically, English 2311 students. The teachers of these students, meaning the ones providing the feedback that students will be observed reviewing and applying, however, represent a distinct population. When data was collected in Fall of 2015, TTU offered 30 sections of 2311 with an enrollment capped at 19 students per section. At the time the study was conducted, these 30 sections were taught by 15 instructors: twelve Technical Communication and Rhetoric (TCR) doctoral students (in their second year of study or above) and three lecturers (including two with full-time appointments) who have earned their doctorate. Graduate part-time instructors (GPTIs) typically teach two sections each semester, with one or two instructors teaching one section each and three lecturers teaching 3-4 sections each. GPTIs are required to have taken English 5366, Teaching Technical and Professional Writing, or its equivalent (coursework or related experience). English 5366 includes instruction on the evaluation of assignments; the majority of instructors will have a similar foundation as to evaluation strategies. When testing was conducted, two of the lecturers were graduates of the TCR program. While the course no longer employs a standard grading rubric, each instructor's rubric must address audience, design, style and editing, structure, and assignment completion.

Given that 2311 instructors are a distinct subset of writing, composition, and technical communication instructors, their perceptions concerning and practices in responding to student texts may differ from those of instructors across the nation. Their approaches to response,

whether they correspond or diverge from those of the larger community, however, directly fed into the feedback experience of English 2311 students.

The minimum criterion for this population was that the participant be a current instructor of English 2311. Participants were recruited via email (the listing of 2311 instructor email addresses is publicly available by accessing "Public Listing of Class Schedule and Course Offerings" on the TTU website) and orally at monthly English 2311 instructor meetings. The TTU instructor survey included all of the theory and practice questions included in the national survey, though some demographics questions (specifically regarding location) were omitted (see Appendix B). Following survey submission, participants could opt to be contacted to participate in the two subsequent phases of the research study by assisting in recruiting students to respond to a survey and/or assisting in recruitment for student user testing.

Instructors who indicated an interest in participating in further research received a follow-up email explaining how they could collaborate in the student pool recruitment for the survey and were provided with a copy of a student survey recruitment email that could be forwarded to their students. In addition, the email detailed their options for collaborating in student recruitment for user testing.

Beyond assisting in recruitment, instructors who opted to participate in recruiting for the user testing phase could follow their normal workflow. Instructors whose students volunteered for testing only needed to provide feedback on the job application assignment, which was a curricular requirement for English 2311 and was usually the first major assignment of the semester, using the medium (embedded commentary, veedback, etc.) of their choice. In accordance with recommendations from the Human Research Protection Program, the instructor was not informed by me which, if any, of the instructor's students had volunteered for testing. As this research asked students to respond truthfully and speak candidly about

instructor practices, it was vital to ensure that students' confidentiality was protected. Therefore, after the recruitment emails, I did not communicate with instructors as to whether their students had participated in testing. If an instructor wanted confirmation of participation (as some instructors offered extra credit for doing so), I provided the student with documentation that the student could then opt to give the instructor.

English 2311 students at Texas Tech University

English 2311 is a sophomore-level English course. It is required for many undergraduate degrees, including Agribusiness; Computer Science; Human Development and Family Studies; Restaurant, Hotel, and Institutional Management; Community, Family, and Addiction Services; and, of course, Technical Communication. It is also a recommended elective for several degree programs, ranging from Exercise and Sports Science to Communications to Mechanical Engineering. Understandably, students enrolled in the course represent a broad range of disciplines.

Given my affiliation with English 2311 at Texas Tech (I have taught the course since 2011), the choice to research the practices of 2311 students may seem solely one of convenience, but it is purposeful. This population has certain characteristics that are desirable for this study. First, to enroll in English 2311, students must have successfully completed English 1301 (Essentials of College Rhetoric) and 1302 (Advanced College Rhetoric), or their equivalents. In addition to the content knowledge these prerequisites assume, composition courses were administered through an online assignment submission and grading system called RaiderWriter. English 2311 students were almost certain to have experience using a learning management system (LMS), both through RaiderWriter and Blackboard (the LMS promoted and supported by the university). This population was expected to have received feedback on their assignments,

and most probably on their writing, through an electronic medium. In other words, as this group already had taken at least two introductory-level college writing courses, they were quite likely to have had to access, review, and apply feedback for previous writing courses. This population was predicted to have expectations and, perhaps, preferences as to the content, style, and mode of delivery of instructor commentary.

Participants also were likely to fit within specific demographics which affected their learning styles and educational experience. Of the over 29,000 undergraduates enrolled at TTU during the 2015-2016 academic year, 92% were from the state of Texas (Texas Tech University Institutional Research, 2016). Public school students in Texas are currently required to take 15 standardized tests before graduation, and curriculum is state-mandated (Klein, 2013; Weissert, 2013). These aforementioned features may be a limitation in terms of generalizability, but they did offer the opportunity to better understand the perceptions and practices of this specific population.

The criteria for participation in the survey was to be a current student of English 2311 and over the age of 18. The design of the survey was based on the one used by Still and Koerber (2010) in their study evaluating the usability of instructor commentary. Beyond standard demographics questions, the survey asked participants to rank their writing proficiency and the importance of instructor commentary in comparison to other instructional techniques and identify their experiences with and preferences for instructor commentary (see Appendix C).

Those who opted to further participate in the study through user testing must also have been enrolled in a participating 2311 instructor's class. Determining an ideal *n* for user testing was challenging. Ideally, sampling would have been theoretical with the goal of reaching data saturation. Like Koerber and McMichael (2008), Guest, Bunce, and Johnson (2006) note that there is no agreed-upon magic number for predetermining sample size. In their research

concerning nonprobabilistic and purposive sampling for studies in which data is solely collected via interview, Guest, Bunce, and Johnson cite multiple disparate claims as to the preferred number, ranging from 36 to 6. In conducting their own study, the authors conducted 60 interviews, and reached data saturation at 12.

With usability testing, five has often been touted as the magic number. According to Nielsen (2012), five users are typically sufficient to determine usability issues with a design or interface; Faulkner (2003) found that while testing 5 users may lead to uncovering the majority (55-99%, *s.d.* of 9) of issues, testing 15 users consistently reveals a greater number of issues (between 88-99%, *s.d.* of 2). BlinkUX, a UX consulting firm, provides a calculator for determining appropriate sample sizes for testing. Calculations are based on findings by numerous researchers, including Faulkner (2003), Hwang and Salvendy (2010), and Tullis and Albert (2008). The criteria for calculation are number of user groups, number of designs, if the findings will be used for comparison in future studies, and whether eye tracking will be a data source. Using this calculator, the recommended sample size for two designs (in this research, embedded text and veedback) was 20, with the assumption that 16 would show for testing. For one design, that recommended sample size was halved. Participants were recruited from multiple instructors' classes in the attempt to ensure that the evaluation of usability was not located in the practice of one particular instructor.

The students who participated in user testing engaged in a testing session of no more than one hour each, during which they completed the following: responded to a pre-test survey determining demographics, perceptions of writing instruction and feedback, and learning styles; were observed reviewing instructor feedback and creating a prioritized revision plan while engaging in think-aloud protocol; and participated in a post-test survey and interview. For the testing, I was the facilitator, and used Morae to administer the testing. Morae is a user testing

program that records participant audio and video, captures screen activity (including mouse clicks and movement), and performs such calculations as time on task.

All English 2311 courses are administered using Blackboard Learn, meaning that course materials, assignment submission, and grades are all maintained within Blackboard. Therefore, any student participants, as part of their participation in the course, were expected to be able to log in to Blackboard and access their assignments and grades. The version of Blackboard used by TTU (9.1), is usable with current versions of all major browsers, including Internet Explorer (IE), Chrome, Safari, and Firefox. Mobile apps for iPhone and Android are available, but for the purposes of this study, were not used, as participants reading either embedded commentary in a Word document or a screencast would need a larger screen (at least tablet-sized) to read and review commentary. The testing environment had a Windows computer with IE, Chrome, and Firefox installed. Participants were able to use their browser of choice to access Blackboard Learn, login, and retrieve their feedback.

The test session consisted of the following activities:

1. **Pre-Test Survey**: The pre-test survey contained three sections: demographics, experience with and preferences for writing feedback; and a learning styles assessment. The first two sections of the survey mirrored the survey of the English 2311 population. Felder and Soloman's "Index of Learning Styles Questionnaire" (1988) was added to consider whether learning styles are a factor in the UX of the different media of feedback. The data gathered from this survey provided partial response to my research question concerning student experience with and expectations for feedback as well as how the medium of feedback may impact user experience, specifically in the UX dimension of engagement and enjoyment. The learning styles assessment was

administered as part of the survey to determine if there were a potential relationship between feedback media, individual learning styles, and usability.

2. **Tasks**: Following survey completion, participants engaged in talk aloud protocol while being observed completing the following tasks:

   A. ***Locating and accessing the feedback for the assignment***:

   Participants used the browser of their choice to navigate to their class in Blackboard and access the evaluated assignment. The purpose of this task was both practical and psychological. It is a "normal" activity that students were expected to engage in for the class, and it was a necessary step to subsequent tasks. Additionally, as the task would be considered "easy," it was quickly completed and functioned to alleviate potential anxiety as to the nature and process of the testing session.

   B. ***Reviewing the feedback***:

   Once the evaluated assignment had been accessed, participants were then asked to review the feedback provided by the instructor. This, as well, was considered a "natural" task for students to complete, as most (though admittedly not all) would check to see their instructor's comments on their assignment. One concern, however, was the potential emotional response of participants in completing this task, given the investment and concern many students have with their grades as well as their perceptions of value and ability as writers.

   C. ***Developing a revision plan***:

   Following the participants' review of their instructor's comments, students were asked to compose a plan for revision. While the task may not have been one students consciously engage in, it is one that those who do revise follow in a less

formal manner; they will review and consider the changes that they should make for the draft.

D. ***Prioritizing the plan***:

Participants were then asked to take the plan they had just created and rank it in terms of importance. This, again, was not a task that students might consciously follow, but one that is considered as part of the revision process. Still and Koerber's 2010 study developed this final task differently; instead of developing a revision plan, participants were asked to go through the revision process during testing. While their approach has merits, such as being able to observe situations in which students struggled with specific wording or phrasing of feedback, it also has its drawbacks in that it introduces additional variables that are not related to the usability of the feedback itself. The actual work of implementing such revisions might affect whether students would actually consider or list certain items. Revision for higher-order concerns is typically more time-consuming and thought-intensive than it is for lower-order concerns; this, in conjunction with the unfamiliar laboratory environment (including lack of access to the student's more "familiar" technology and workspace), would have affected the revision process. As Still (2011) has noted, the laboratory environment is not a familiar ecology; users may be affected by lighting, sound, even the visuals of a space. The seemingly sterile usability lab, with its fluorescent lights, minimal sound, and glaringly white walls are likely radically different from these writers' chosen environments of their dorm rooms, the library, or a coffee shop. Hypothetically, a student who is a Mac user might be unfamiliar with using formatting and editing functions in the Windows version of MS Word; this would add to the time, as well as frustration and potential

anxiety, of composing a revision. The cognitive load of changing structure or document design would be much greater than that for fixing a comma splice or sentence fragment.

Observing students through revision also brings the usability of the teacher's overall instruction into play. The purpose of this research is to determine how well students can understand and process the feedback provided; although improving the writing is the long-term goal, what is being measured is the comprehension and application as in identifying higher- and lower- order concerns in revision, not in the students' ability to complete the revision itself (which is highly dependent upon multiple variables, including previous coursework and existing level of writing ability). It was in consideration of this complexity that I chose to design my study so that users would construct revision lists instead of completing the actual revisions. Talk-aloud protocol during this task allowed me to gain greater insight into what Albers (2011b) terms "contextual awareness," meaning "how a person has integrated the available information into something relevant for his or her current situation" (p. 112).

Each of these tasks provided data to answer each of my research questions: during test session, the instructor's feedback was collected as an artifact (data as to how instructors are providing commentary). Reviewing the feedback, students made comments as to whether their instructor's comments aligned with their expectations. Through observation, talk aloud protocol, and the participants' revision lists, I learned how students interacted with feedback. Tasks A and B assisted in evaluating the usability of the feedback by first determining its accessibility, learning if students were able to, with relative ease, find and review the feedback provided by the instructor. Tasks C and D helped to assess the usability of the complex system of

feedback and whether it was affected by media—in other words, if students used the information and identified areas for improvement.

3. **Post-Test Survey**: The post-test survey was modeled on that used by Still and Koerber (2010) and is an adaptation of the System Usability Scale (SUS). The survey asks participants to complete statements by choosing from a range of responses (such as "very useful, "useful," "not very useful," or "not useful at all" (Still and Koerber, 2010). These responses, essentially, constitute the participants' usability evaluation.
4. **Post-Test Interview**: Again, modeled on Still and Koerber's 2010 study, the post-test interview asked a series of perceptual questions concerning participants' views on the usability, or usefulness, of instructor commentary. In addition, relevant questions were asked as to the participant's experience, including issues such as task error or task failure.

During the test session, four sets of artifacts were collected: the assignment submission with instructor commentary, the completed grading rubric for each submission, the initial revision plan, and the prioritized revision plan. The assignment submissions and grading rubrics provided concrete artifacts to respond to the question of how instructors were providing feedback to students. The revision lists were an additional data source to answer how students interact with instructor feedback. To review the test plan in its entirety, see the Feedback Usability Test Script (Appendix D).

Data Analysis

Data were analyzed using a variety of methods and technologies. Survey results, including those with qualitative content (such as rankings and preferences), were calculated using the features of Qualtrics (the survey administration interface) and Microsoft Excel. With

user testing data, I used both Morae and Microsoft Excel for calculations and coding. I took advantage of Morae's features to calculate quantitative data such as time on task and SUS results; I also used an emergent approach for coding qualitative data and developed a coding schema in Morae for the recordings.

For the assignment submissions and grading rubrics, coding was a challenge. I had considered using the taxonomy of revision developed by Faigley and Witte (1981), but it was insufficient as the main categories (surface and text-base) did not account for design. Design is not text-base, but it can affect macro-structure and microstructure as well as functioning as a surface "meaning-perceiving" change. In reviewing the submissions and as informed by other research, I developed the following coding schema:

- Instructor Phrasing
    - Direct ("Do this.")
    - Indirect ("Not sure this is needed.")
    - Question ("What is this?")
    - Suggestion ("Maybe if you bring this to one line, you can fit the resume on one page")
- Instructor Tone (Dragga, 1988)
    - Positive ("Great design that highlights the key terms from the job ad!"
    - Negative ("This paragraph doesn't have support and the purpose is unclear")
    - Neutral ("Remember your topic sentence needs a claim that the paragraph will support.")
- Notation Type
    - Comprehensive: a general statement as to the cover letter, resume, or assignment in its entirety

        - Content: claims, support, evidence
        - Design: aesthetics and usability
        - Genre: conventions particular to job application materials
        - Grammar (Connors & Lunsford, 1988; Lunsford & Lunsford, 2008): grammar, punctuation, mechanics
        - Structure: organization, logical flow, transitions
        - Style: tone, word choice, flow, conciseness
    - Rationale
        - Yes: context or reason provided
        - No: no context or reason provided
    - Notation
        - Correction: a direct change or edit (such as a strikeout)
        - Comment: a written note (more conversational)
    - Placement
        - Cover letter
        - Cover letter comprehensive
        - Resume
        - Resume Comprehensive
        - Rubric

Student revision plans (initial and prioritized) were coded for type and placement using the above categories, with notations made for the change in ranking after revision lists were prioritized. These lists were also analyzed in conjunction with the students' talk aloud statements and the post-test interview.

Table 1 provides the defined markers, which included codes for statements aligning to a learning styles preference (which were compared with the assessment results from the pre-test survey):

Code	Definition
A	Active Learning Style: discussing, applying, or explaining to others
C	Commentary: user directly references instructor comments (in creating or prioritizing revision plan)
X	Error: User experiences difficulty or is unable to complete task. Measured on a scale from 1 (minor and easily recoverable) to 3 (severe and unable to proceed without assistance)
G	Global Learning Style: solve complex problems quickly or put things together in novel ways once they have grasped the big picture
I	Interface: User experiences and/or makes statements concerning the interface (Blackboard, operating system, browser)
N	Intuitive Learning Style: like innovation and dislike repetition
O	Observation: Notation made concerning facial expressions, shifts in tone, or user process
P	Participant Prompted: Facilitator responds to user question or asks question to assist or encourage user during the task (such as “look around the screen; do you see anything there that might expand the window?”)
Q	Quote/Comment: A statement uttered by the user that is of interest or relevance
R	Reflective Learning Style: “Let's think it through first.”
S	Sensing L Learning Style S: like solving problems by well-established methods and dislike complications and surprises
L	Sequential Learning Style: to gain understanding in linear steps, with each step following logically from the previous one
H	User Needs Help: User requests direct assistance because of inability to complete task
B	Verbal Learning Style: preference for the written or spoken word
V	Video Clip: Notation to extract video for later reference and/or reporting
E	Visual Learning Style: preference for data visualizations and/or graphical elements (such as lines, arrows, colors, circles)

Table 1: Morae Coding Schema

Marker sub codes were also used to indicate the following:

- Positivity (user responded to instructor commentary positively, whether agreeing or disagreeing)
- Negativity (user responded to instructor commentary negatively, whether agreeing or disagreeing)
- Blackboard UX (comment concerning Blackboard interface specifically)

- Grades (references grades in comment)
- Technology Choice/Medium (comment on browser or operating system)
- Comments vs Rubric (comment comparing instructor commentary to rubric notes or score)
- Disagreement (with instructor comment)
- Agreement (with instructor comment)
- Hindsight ("I should have done that to begin with")
- Reference to Classroom Instruction (references classroom activity or lesson)
- Talk aloud (talk aloud statement not directed at facilitator)
- Instructor Expertise (references instructor subject knowledge)
- Returns to Comments (marked each time the user returned to the evaluated assignment while creating the revision plan)

The post-test interviews were transcribed by uploading the interview audio to YouTube (files set to private), using YouTube's auto-caption feature to create a transcription, and then editing that transcript within the YouTube interface. The SubViewer (SBV) caption files were then downloaded and run through a macro created in MS Word. In analyzing the content of the transcripts, the following codes emerged:

- Detail/Specificity: statements made as to preferences for detailed explanations in commentary
- Directness: statements made as to a preference for direct statements from instructor
- Medium: statements made concerning feedback medium (printout, embedded commentary, conferencing, etc.)

- Tone: statements made as to preferences or experiences concerning instructor tone

Microsoft Excel was used to calculate frequency and rankings for survey results as well as to track and analyze artifacts coding. Pivot tables, an Excel feature, facilitated the process by enabling cross-data point calculations.

Ultimately, this study was designed to look at instructor commentary through a very specific lens: user experience (UX). Survey responses provided "stepping stone data" to determine how feedback was being delivered, helping to establish user experience and expectations. Methods for determining the quality and usability of that user experience were triangulated during user testing, following the adage of "see, say, do"—meaning what do users see, what are they saying about their experience, and what are they doing with the information provided. The chapter that follows reports the findings from the study.

Chapter IV

Findings

As explained in the methods chapter, the research plan for this study was designed to explore both instructor and student engagement with writing response. This chapter presents the findings from the research, specifically survey responses of instructors and students as well as student observation and interviews. It is organized into the following sections:

- **National Instructor Survey**. Results from a survey of 69 instructors across North America conducted to answer, in part, how instructors are providing feedback to students, as well as how, from the *instructors'* perspectives, students interact with commentary.
- **English 2311 Instructor Survey**. The findings from the survey of 7 instructors of English 2311 at Texas Tech University (39% of the population) indicate the level of correlation or divergence with national instructors as to practices and perceptions.
- **English 2311 Student Survey**. The responses from this survey of 60 English 2311 students provided a student-centered perceptual response to all of my research questions: how they receive feedback, what were their experiences with and expectations of feedback, how did they interact with feedback, and their opinion on how the medium of feedback affects its usability.
- **Usability Testing of Instructor Feedback**. Data collected from user testing of 16 English 2311 students provided answers to all of the research questions, integrating student perception along with observation and application.

In actuality, a crucial part of the study did not go as planned. The original research plan aimed to compare student experiences between embedded text commentary and veedback. Due to multiple constraints (which will be touched upon in this chapter but analyzed more fully in the following chapter), no data were collected as to veedback.

National Instructor Survey

The goal of the National Instructor Survey (NIS) was to answer, on the macro level, my first research question: how are instructors currently providing feedback to students (what media, content, and style)? The results offered insight into instructor practices as well as the instructors' perceptions of the efficiency and efficacy of those practices. The survey had a 97% completion rate (69 participants began the survey; 67 answered all questions) with nearly three quarters of all respondents (51) finishing the survey within six minutes. For ethical reasons, participants were not required to respond to any questions following the consent agreement. This was to avoid any hint of coercion. However, except for the two participants who dropped out on the last question (which may have been an error with submitting the final page), all questions were answered.

There was at least one respondent from each US state. The highest number of participants (eight) were from Texas, but Alabama and Florida each had six respondents, and California, Illinois, Ohio, and Pennsylvania each had five. One participant was located outside the US and Canada. Many of the respondents (57%) taught at universities (see Figure 4: Institutional Affiliation of Respondents), with 49% (34) holding the rank of professor (assistant, associate, or full). The remaining respondents identified as instructors or lecturers (both tenured and adjunct) (26; 38%), graduate instructors (six; 9%), and the remaining indicated titles such as "coach" or administrative positions such as director of first-year writing. Over half (57%) had been teaching

for over a decade; all but ten of the sixty-nine respondents had been teaching six years or more, and 81% (56) had been teaching writing or multimodal courses a minimum of six years.

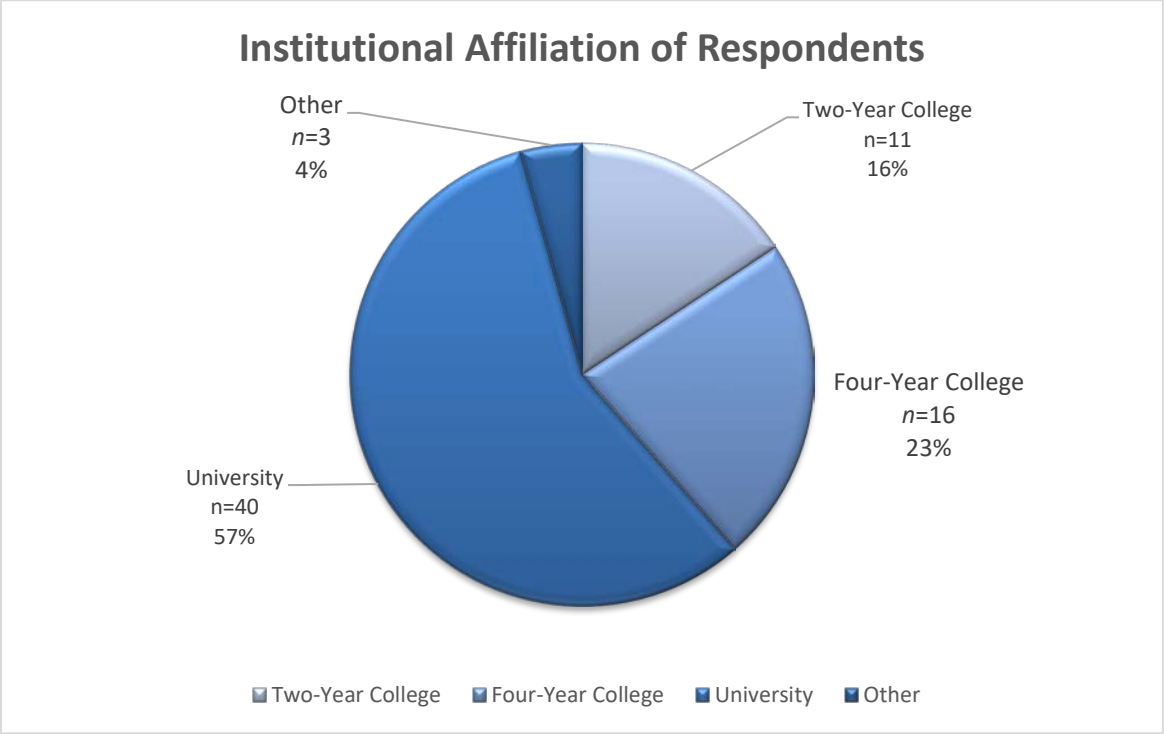


Figure 4: Institutional Affiliation of Respondents

Of the 69 instructors who participated in the survey, all but one taught undergraduates to some extent. Less than a third (28%) taught graduate as well as undergraduate students. As far as class environment, overwhelmingly these instructors taught, to some extent, face to face (94%); approximately one-third taught online and/or hybrid courses (28% and 30%, respectively).

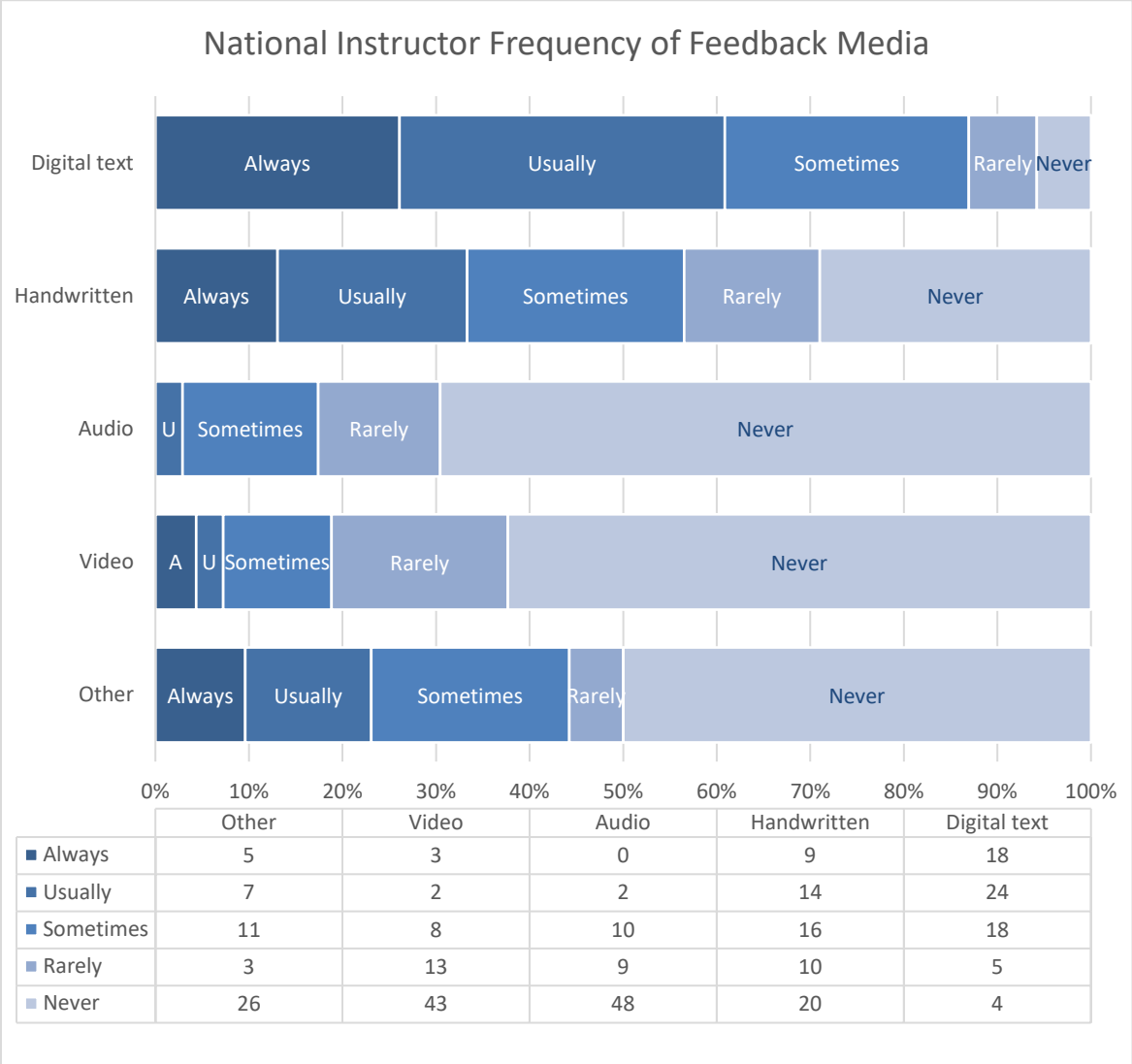
Regarding the ways in which instructors designed and conducted their writing/composing classes, more than half (59%) allowed revision of assignments for a higher grade; 32% allowed revision for consideration as part of a larger project (such as a portfolio). Only 9% did not incorporate revision into their courses.

In asking how instructors provided feedback, respondents ranked options according to frequency or likelihood of using a particular medium (Always, Usually, Sometimes, Rarely, or

Never). The most frequently used mode of feedback was that of embedded commentary in digital documents (see Figure 5). Interestingly, fifteen of the "Other" responses indicated that face-to-face conferencing was part of the participants' response strategies. The "Other" selection, as well, indicated how instructors might mix modalities with their digital responses. For example, one respondent noted:

> Sometimes I use annotated screenshots as part of my feedback. I also sometimes use photographs—for example, when I commented on student presentations this week, I included several photos to demonstrate their body language or something positive/negative about their slides.

Another respondent listed their process as, “rubric comments, electronically, through Blackboard or Turn it In [*sic*] (and audio and embedded text commentary through those).”



	Other	Video	Audio	Handwritten	Digital text
Always	5	3	0	9	18
Usually	7	2	2	14	24
Sometimes	11	8	10	16	18
Rarely	3	13	9	10	5
Never	26	43	48	20	4

Figure 5: National Instructor Survey Frequency of Feedback Media

Surprisingly, most instructors (70%) believed that they spent a manageable and appropriate amount of time commenting upon and evaluating each assignment (see Figure 6). This seems in contrast to the anecdotal evidence of teachers lamenting how long it takes them

to grade projects. As the question that was asked was completely subjective, there is no way to determine what a “manageable” amount of time may be.

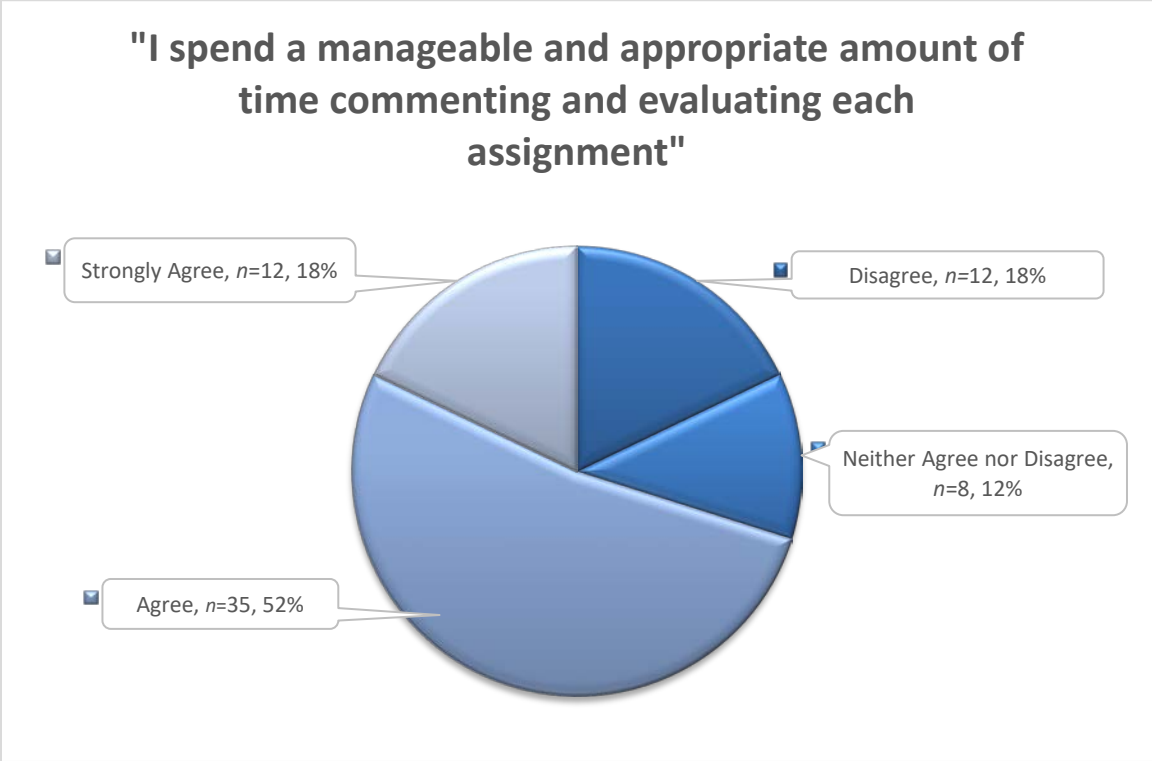


Figure 6: National Instructor Survey Response to Manageable and Appropriate Time Commenting

While most instructors deemed their time spent was “manageable and appropriate,” those who did not strongly agree or disagreed made statements indicating either uncertainty or frustration. As one respondent put it,

> Made me chuckle to think about a "manageable" amount of time. I suspect I'm an "over commenter" and do too much in terms of responding to my students' drafts. But they tend to write on my course evaluations that the written feedback was tremendously helpful and that they really value having a teacher who takes their writing so seriously. (NIS Respondent #54)

Another wrote, “I wish that doing it well were not so tedious” (NIS Respondent #50). Those who selected “disagree” were the most vocal, making statements such as:

> It takes forever and a day for me to give feedback that I think is useful and useable — and that addresses higher order concerns. Noting grammar errors is easy; pointing out that paragraphs are out of order, explaining why the order doesn't work, and suggesting an alternative without telling a student what to do is not easy. Not at all. (NIS Respondent #62)

> Regarding the manageable amount of time: I spend too much time commenting, considering I don't know how many students really read the comments I give. While I have not had students tell me to my face that they don't bother reading the comments, I have had students tell me they appreciate my level of feedback. For that reason, I continue to give more feedback than people like Nancy Sommers recommend even though it is time-intensive. (NIS Respondent #65)

Another lamented, "I spend way more than a manageable amount of time giving my students feedback on their writing. I am working on how to make this workload manageable, but right now, it is not" (NIS Respondent #63). NIS Respondent #67 hinted at broader administrative and institutional issues, stating, "our teaching load is just too great."

Overall, instructors were confident as to their students' reception and application of feedback. Of the 67 who responded to this section, 58 (87%) agreed or strongly agreed that their commentary was comprehended by their students, and that, from these comments, students understood the rationale for their grade on the assignment (see Figure 7). Eight of the respondents neither agreed nor disagreed, and only one disagreed. The same number of respondents agreed or strongly agreed that their students would be able to apply commentary in revision as well as for future writing assignments; there was a minor shift with two

disagreeing with the statement and seven of the respondents neither agreeing nor disagreeing (see Figure 7). Given these responses, it would seem that the majority of these instructors, at least, believe that their strategies are efficient for them and effective for their students.

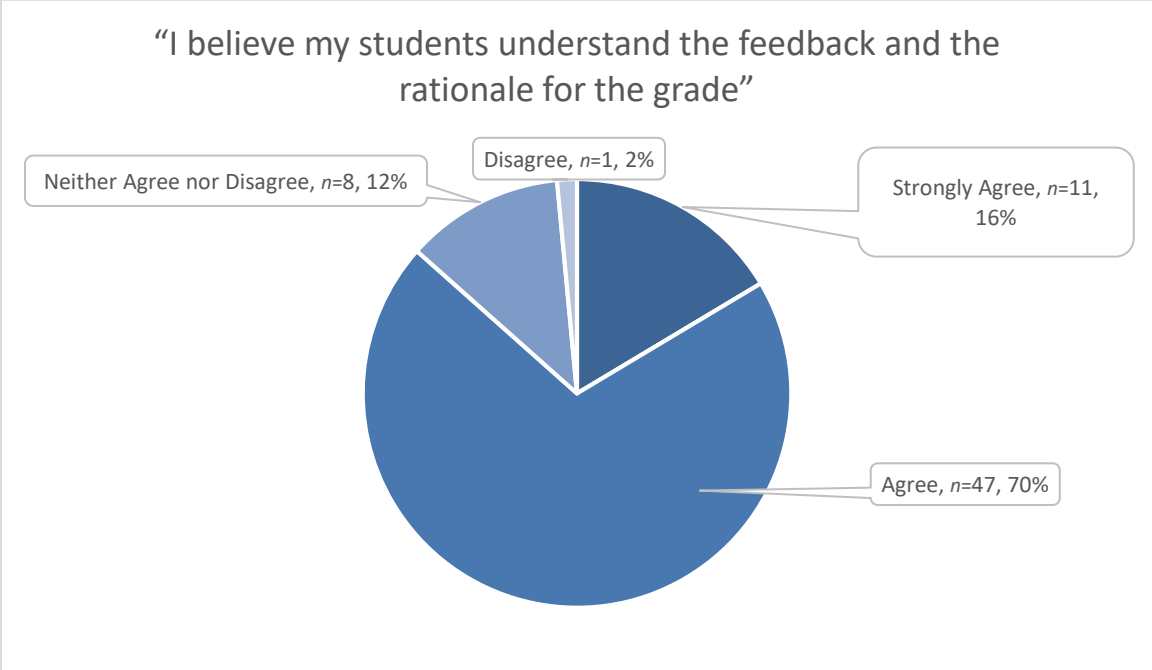


Figure 7: National Instructor Survey Perception of Student Understanding of Feedback and Grade Rationale

Most respondents felt that students were able to apply instructor feedback, with 87% (*n*=58) either agreeing or strongly agreeing. Only 3% of respondents (*n*=2) disagreed with the statement, with the rest (*n*=7) neither agreeing nor disagreeing (see Figure 8).

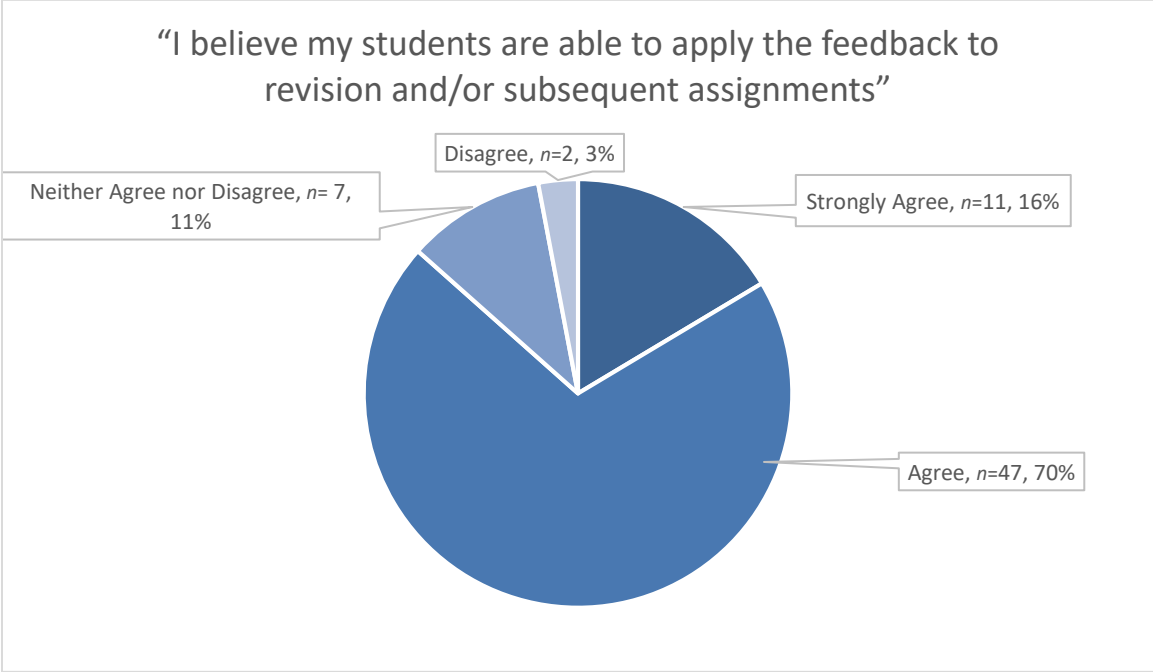


Figure 8: National Instructor Survey Perception of Student Application of Feedback

Again, respondents' comments, while not contradicting their level of agreement with statements, did allude to deeper concerns. Two respondents voiced their beliefs that students don't usually review instructor commentary unless there is disagreement as to the grade.

Overall, the National Instructor Survey responses indicate that writing instructors are typically using embedded digital comments for feedback, although handwritten commentary is still provided. The findings also suggest, however, that while instructors primarily use these media, they may also provide different methods and media for response depending upon the assignment or activity. The respondents were relatively confident about the effectiveness of their methods.

English 2311 Instructor Survey

The goal of the survey of English 2311 instructors was to provide answers to the first research question as well, this time on a micro level to analyze in light of the data collected during user testing. Of the eighteen instructors (eleven of whom were Graduate Part-Time Instructors) teaching the course this semester, seven, or 39% of the total population, participated in the survey. All who started the survey completed it. While I was an instructor during this semester, I did not complete the survey or take part in testing.

Only one of the respondents identified as a lecturer (meaning an instructor with continuing employment). The rest identified as instructors, which encompassed Graduate Part-Time Instructors (GPTIs) or contingent faculty. All taught on-site, though one also taught an online course. Interestingly, there was a clear demarcation of teaching experience in any discipline, with 57% (4 participants) having taught between two and five years, and 43% (3 participants) having taught eleven years or more. Specifically in terms of writing or multimodal composition courses (such as Composition, Technical Writing, or composing in other disciplines), respondents were again split at either the lower end of the range (in this case, between zero and five years) or at the higher end of the range (eleven years or more) (see Figure 9). All taught

undergraduates; only one taught graduate courses as well.

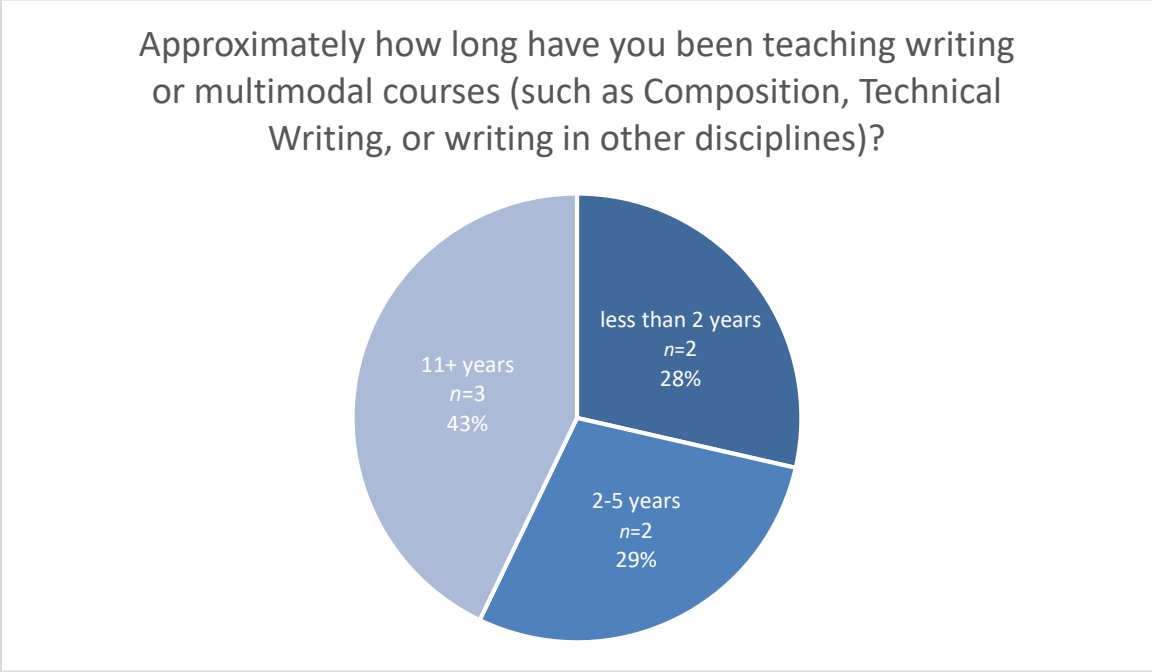
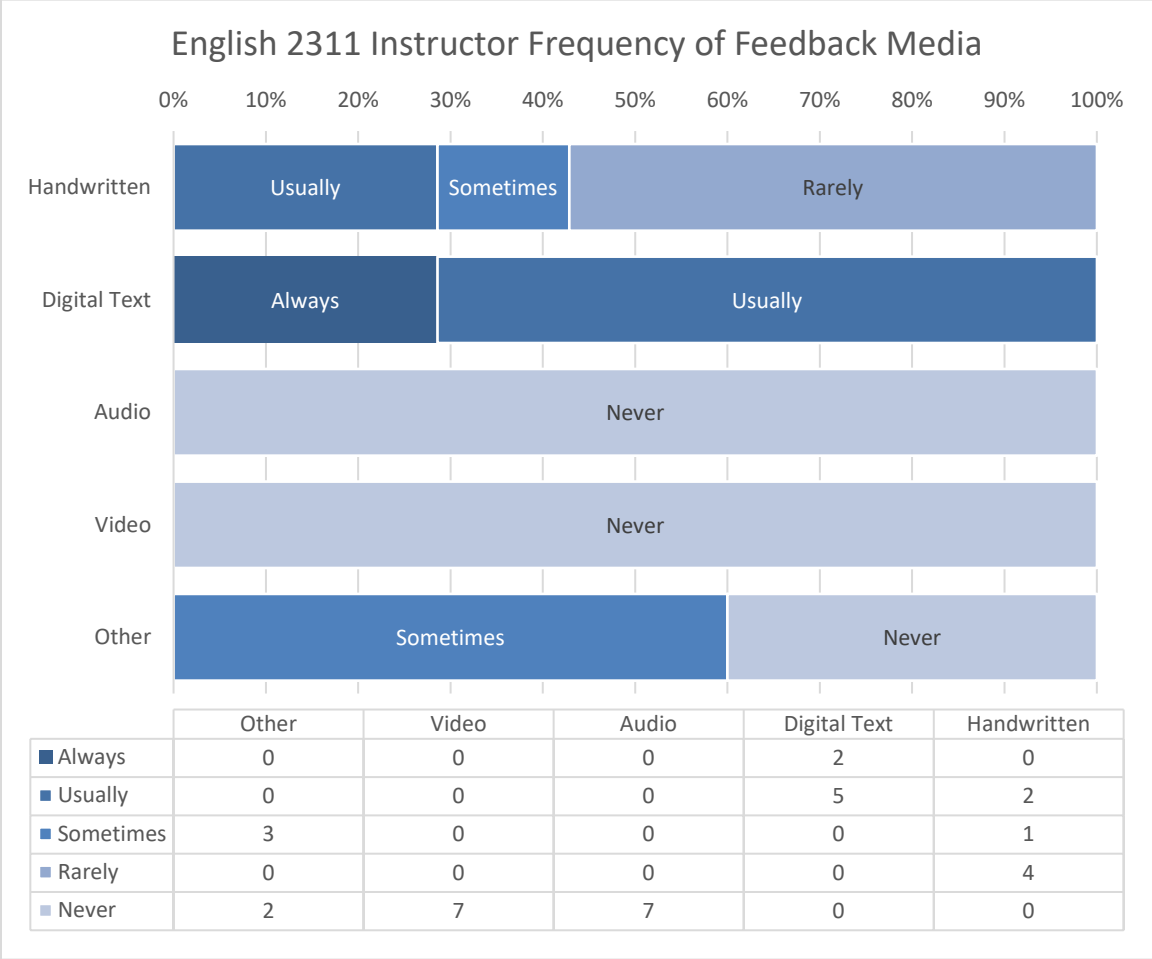


Figure 9: ENGL 2311 Instructor Experience Teaching Writing

As with the National Instructor Survey, respondents ranked options according to frequency or likelihood of using a particular medium for response (Always, Usually, Sometimes, Rarely, or Never). The Texas Tech instructors were far more likely to use embedded or inline alphabetic commentary than their colleagues nationally; only one respondent commented that they sometimes use face-to-face conferencing, and another stated that they sometimes include an audio file (not embedded, but separate) (see Figure 10). None of the respondents reported

using screencast/veedback or embedded audio for feedback.



	Other	Video	Audio	Digital Text	Handwritten
Always	0	0	0	2	0
Usually	0	0	0	5	2
Sometimes	3	0	0	0	1
Rarely	0	0	0	0	4
Never	2	7	7	0	0

Figure 10: English 2311 Instructor Frequency of Feedback Media

That only one of the respondents used any type of non-alphabetic media for feedback may have contributed to the inability to collect the data originally planned: veedback. TTU 2311 instructors who collaborated in recruitment for student user testing did not, as habit, provide commentary in anything other than alphabetic form. While participating instructors were invited to receive training on free applications to provide feedback, their responses elicited unsolicited yet quite telling information. All expressed interest in learning and implementing veedback in their teaching, but with the exception of one participant, all cited their workloads

and other commitments (such as dissertation completion and the time-consuming expectations of being on the job market) as a barrier to learning and adapting a new technology.

The English 2311 Instructor survey included a question that did not appear on the National Instructor Survey: "Do you train students on how to review and apply feedback?" Only one respondent stated that they did not; the rest did so through in-class lecture or activity (*n*=4), included the information in their syllabus (*n*=1), and/or in individual conferences or meetings (*n*=4). Three respondents used two strategies (see Figure 11).

"Do you train students on how to review and apply feedback?"

	Respondent						
	1	2	3	4	5	6	7
Yes, as an in-class lesson/activity	●		●	●		●	
Yes, as part of course materials (either in syllabus, handouts, or digital resources)	●						
Yes, in individual conference, meetings, or communication		●		●		●	●
No					●		

Figure 11: English 2311 Student Training on Feedback

Regarding the ways in which instructors designed and conducted their writing/ composing classes, more than half (57%; *n*=4) allowed revision of assignments for a higher grade; 14% (*n*=1) allowed revision for consideration as part of a larger project (such as a portfolio). Surprisingly, 29% (*n*=2) did not incorporate revision into their courses. Granted, the small size of the sample (*n*=7) makes me hesitant to draw any conclusions from the data, but the percentage of 2311 instructors who allowed revision for a higher grade (57%) closely correlates to that of the National Instructor Survey (59%).

Most instructors (71%, *n*=5) believed that they spent a manageable and appropriate amount of time commenting upon and evaluating each assignment. This percentage was nearly identical to that of the National Instructor Survey (70%). One respondent neither agreed nor

disagreed with the statement, while another disagreed (see). None of the respondents opted to explain why they responded as they did.

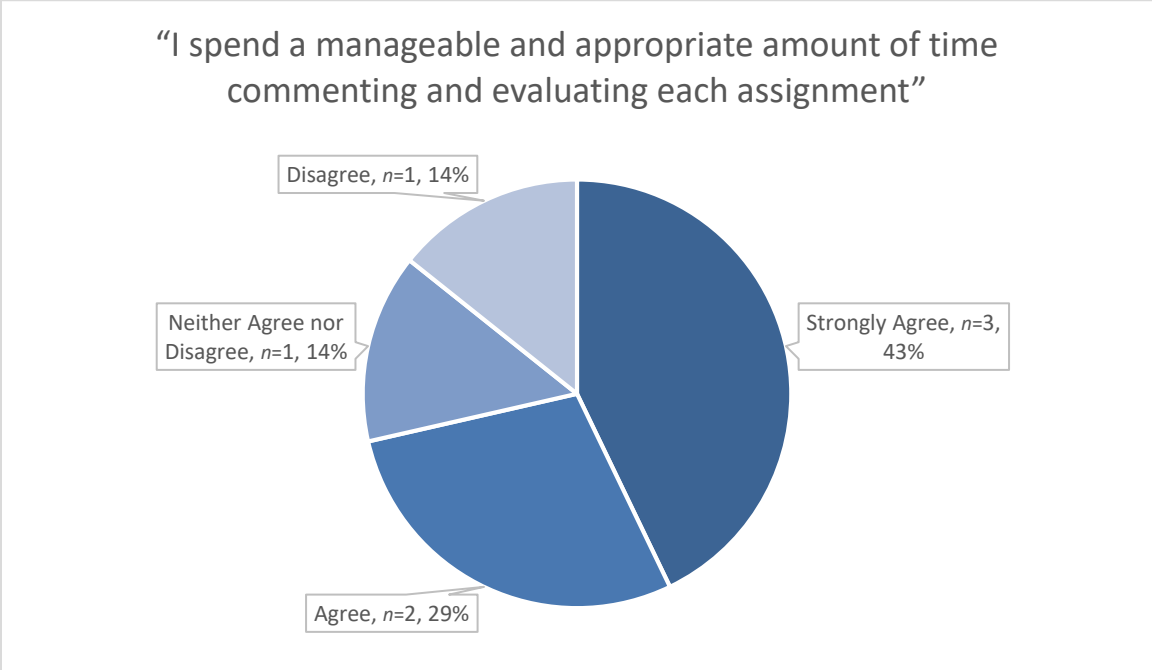


Figure 12: ENGL 2311 Instructor Evaluation of Manageable and Appropriate Time Commenting

Overwhelmingly, instructors were confident that students understood the feedback and the rationale for the grade, with six (86%) agreeing with the statement and one (14%) neither agreeing nor disagreeing. This, again, closely mirrors the National Instructor Survey, in which 87% agreed or strongly agreed with the statement. However, TTU 2311 Instructor Survey Respondent #2, who agreed with the statement, did note:

> The previous question asking if I think students *understand* and *use* feedback, it is hard to tell. I hope so and I know some students come to my office hours to ask for clarification. My assumption is that if students do not ask for help, they understand"

Interestingly, all TTU 2311 Instructor Survey respondents agreed with the statement "I believe my students are able to apply the feedback to revision and/or subsequent assignments."

In comparison, 87% of National Instructor Survey participants agreed or strongly agreed with the statement, while 10% neither agreed nor disagreed.

As has been noted earlier, due to the small sample size of both the national writing instructor population and the TTU English 2311 instructor population, I cannot argue that these findings are statistically significant. They are, however, intriguing in that there seems to be some relationship between perceptions and practices for both groups surveyed. Perceptional range questions often had similar responses percentage-wise, with differences between shades of the range (e.g., from strongly agree to agree). While I cannot state with confidence that the TTU 2311 Instructor subset's perceptions and practices are representative of the population, the data suggest that they are closely aligned. Both populations of instructors primarily use embedded digital text for responding to student writing, with some handwritten feedback; both populations are rather confident in the effectiveness of their response strategies in regards to student comprehension and ability to apply the concepts.

Survey of English 2311 Students at Texas Tech University

The results of the survey of English 2311 students at Texas Tech helped to answer, on a macro level, my second research question: what experiences with and expectations for feedback do students have? English 2311 instructors collaborated in recruitment by forwarding a survey email link and/or allowing me to visit their class to recruit. Discounting completely blank entries and one duplicate that was restarted, a total of 62 students began the survey. Two dropped out at the question, "Are you age 18 or older?", so it can be assumed that they were ineligible due to age. Of those who continued past that point (*n*=60), 96% completed it (*n*=58). However, participants had the option to skip questions, so not all questions were answered. Per recommendations from the university's Human Research Protection Program (HRPP), the survey did not ask the participants to identify their instructor or section. Furthermore, as required by

HRPP, upon survey completion and submission, the participant was forwarded to a new page where they could opt to provide identifying information to participate in usability testing. In this way, identifying data was disassociated from the survey responses.

Demographics.

Participants ranged in age from 18-28, with 60% of respondents (*n*=36) aged 19-21. More than half of the respondents were female (*n*=34) (see figure). These percentages contrast with that of the overall TTU student population, which for the 2015-2016 academic year was 46% female and 54% male (Texas Tech University Institutional Research, 2015). Most of the participants were juniors (42%), with sophomores and seniors accounting for 28% and 30% of the total participants respectively (see figure). As English 2311 is a 2000-level course with the First-Year Composition sequence ENGL 1301 and 1302 as prerequisites, it is extremely rare for

students with the academic classification of freshman to be enrolled in the class.

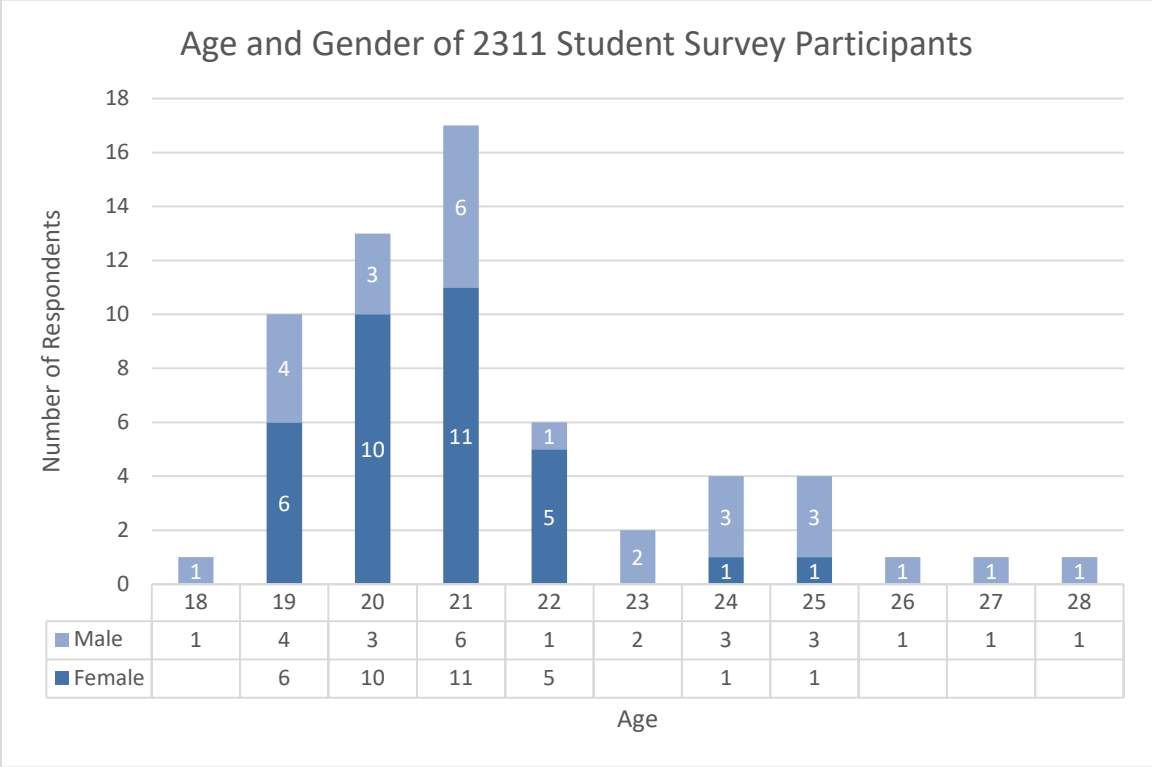


Figure 13: ENGL 2311 Student Survey Participant Age and Gender

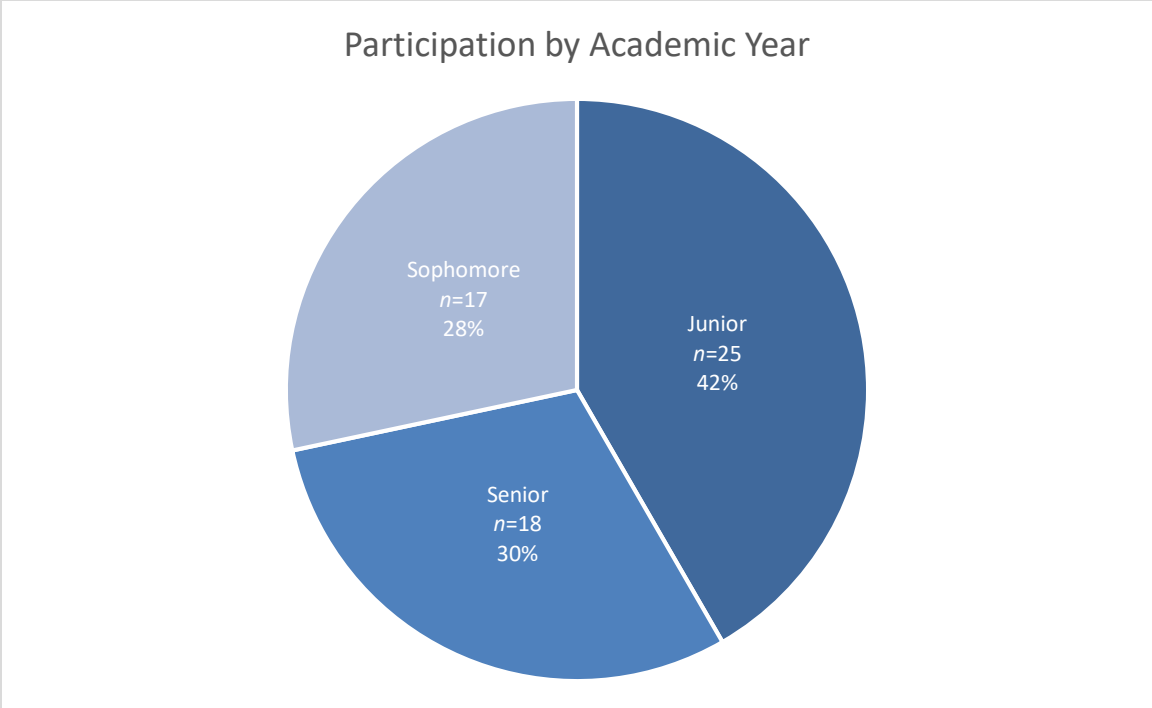


Figure 14: ENGL 2311 Student Survey Participant Academic Year

Respondents represented six of the university's eleven colleges and schools that offer undergraduate degrees and a total of 29 different majors.[6] Figure 15 illustrates survey participation by school, department, and major. The innermost rings indicate the school or college, the middle rings the department, and the outermost rings the major. Some majors are named the same as the department (such as with Mathematics and Geosciences). For reporting, the repetition was maintained for consistency. Most of these majors either require ENGL 2311 or list it as an elective. The highest concentrations of majors were in Exercise and Sport Sciences (ESS) and Chemical Engineering (CHE), each with nine participants, or 15% of the total. Though

[6] Schools/colleges not represented were Architecture, Education, the Honors College, the TTU Provost, and Visual and Performing Arts. This information is available in a data table in Appendix E.

ESS requires a 2300-level English course, CHE does not.

Figure 15: English 2311 Student Survey Respondents by College, Department, and Major

Respondents were asked to rate their level of English fluency. The majority (83%, *n*=50) were native speakers of English who rated their fluency as Advanced or Superior. Ten of the

respondents were non-native speakers of English; nine rated their fluency as Advanced or Superior.

Writing instruction experience.

For most respondents, ENGL 2311 was their third college-level writing class (see Figure 16). This is logical since, as noted earlier, two first-year writing courses must be successfully completed to be able to enroll.

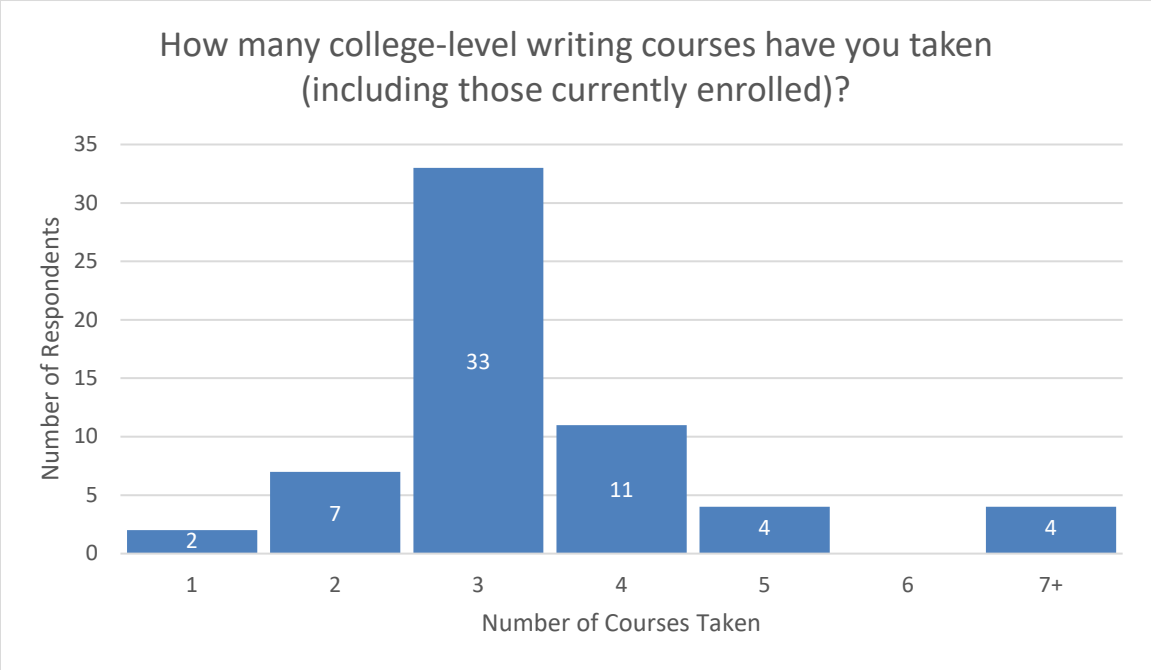


Figure 16: ENGL 2311 Student Survey Respondents' Number of College-Level Writing Courses Taken

When asked to rate their writing scales on a scale of 1-10, most (63%, *n*=) rated themselves at a six or seven, with a mean score of 6.93. None of the respondents rated themselves lower than a four. The average rating for native speakers of English was 7; for non-native speakers, 6. Native English speakers who considered their overall fluency as Advanced or

Superior rated their writing skills more highly than non-native speakers of English, with a mean of 6.689 and 7.375, compared to a 6 for both Advanced and Superior non-native speakers.

Respondents overwhelmingly felt that instructor feedback (whether on previous work or a draft) was important to their success with writing, with 48% (*n*=29) ranking it most important, and 51% (*n*=31) ranking it as important. Only one participant did not consider it very important. Despite this, respondents reported that they relied most on assignment instructions to write a document for class (61%, *n*=33) (see Figure 17); referring to assigned readings was typically

ranked least important.

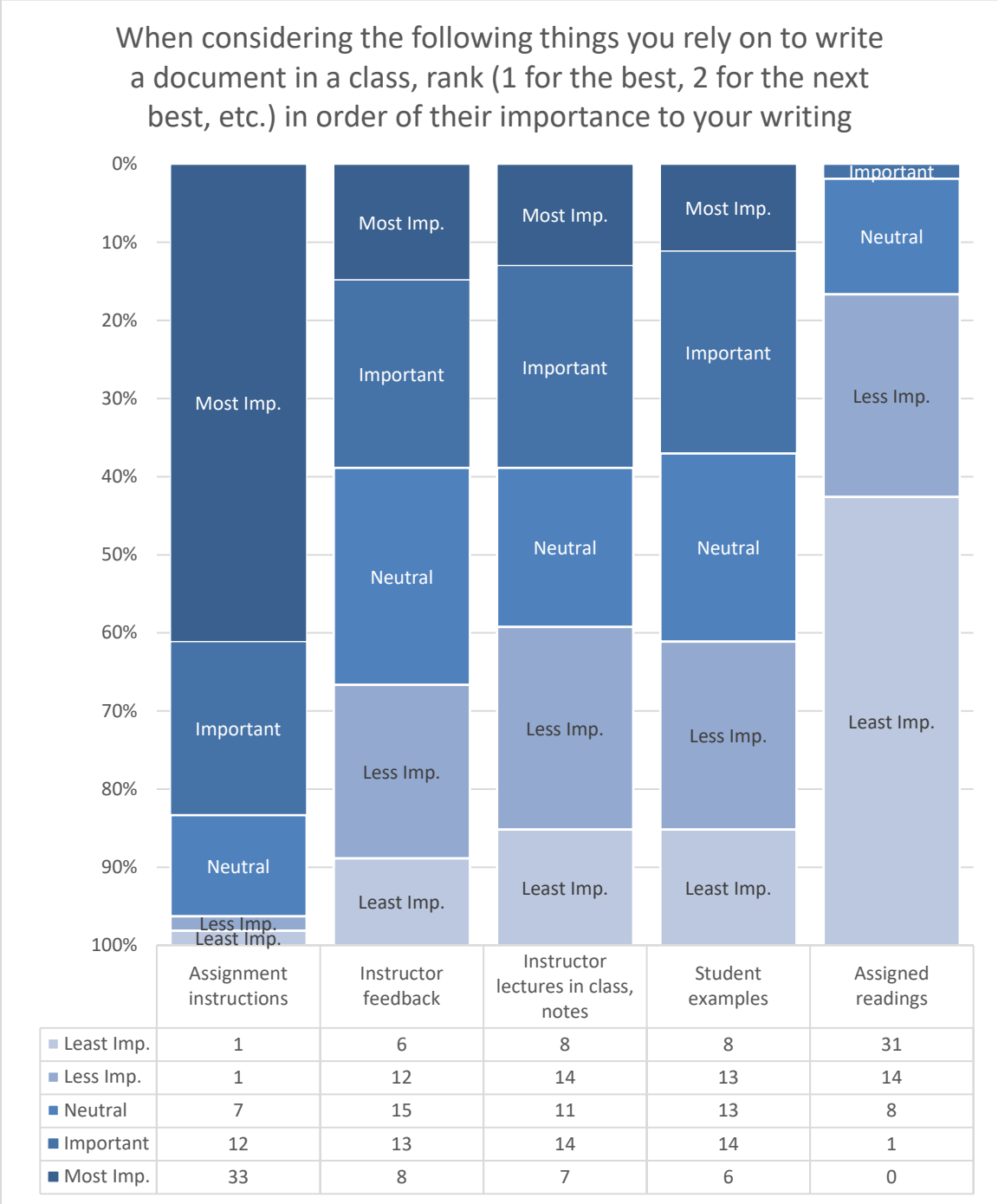


Figure 17: ENGL 2311 Student Survey Ranking of Class Resources' Importance for Writing

Regarding the media in which students had previously received feedback in classes, most had experience with handwritten feedback (86%) or embedded text commentary (such as

MS Word review functions, Adobe PDF commenting, or RaiderWriter) (64%). Nearly a third (28%) reported receiving feedback through instructor conference. Only 3.45% of participants had received feedback with video or audio (see Figure 18). The lower percentage of students having experience with embedded text commentary was surprising, as the prerequisites for the course, ENGL 1301 and 1302, used a proprietary grading and commenting system known as "RaiderWriter."[7] With this system, all instructor/grader commentary was delivered digitally through embedded commentary. It is possible that some respondents either fulfilled the first-year composition requirements at another institution, or that the respondents did not consider RaiderWriter "embedded text commentary," despite it being listed in the description. The two "other" responses indicated that the respondents had not previously received writing feedback.

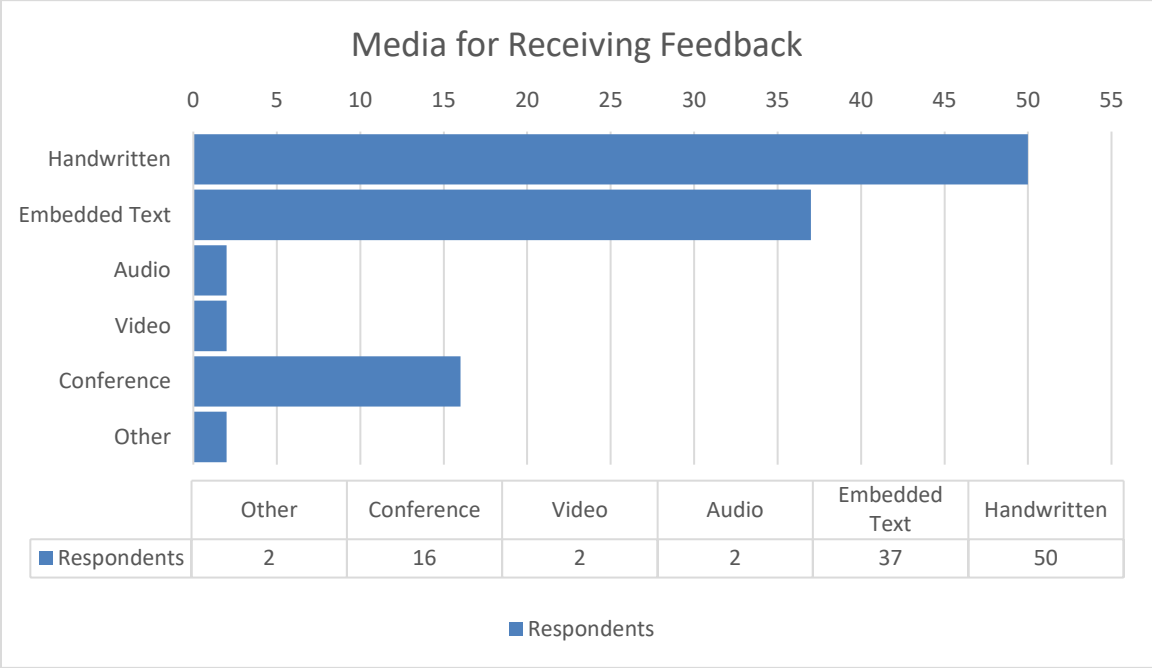
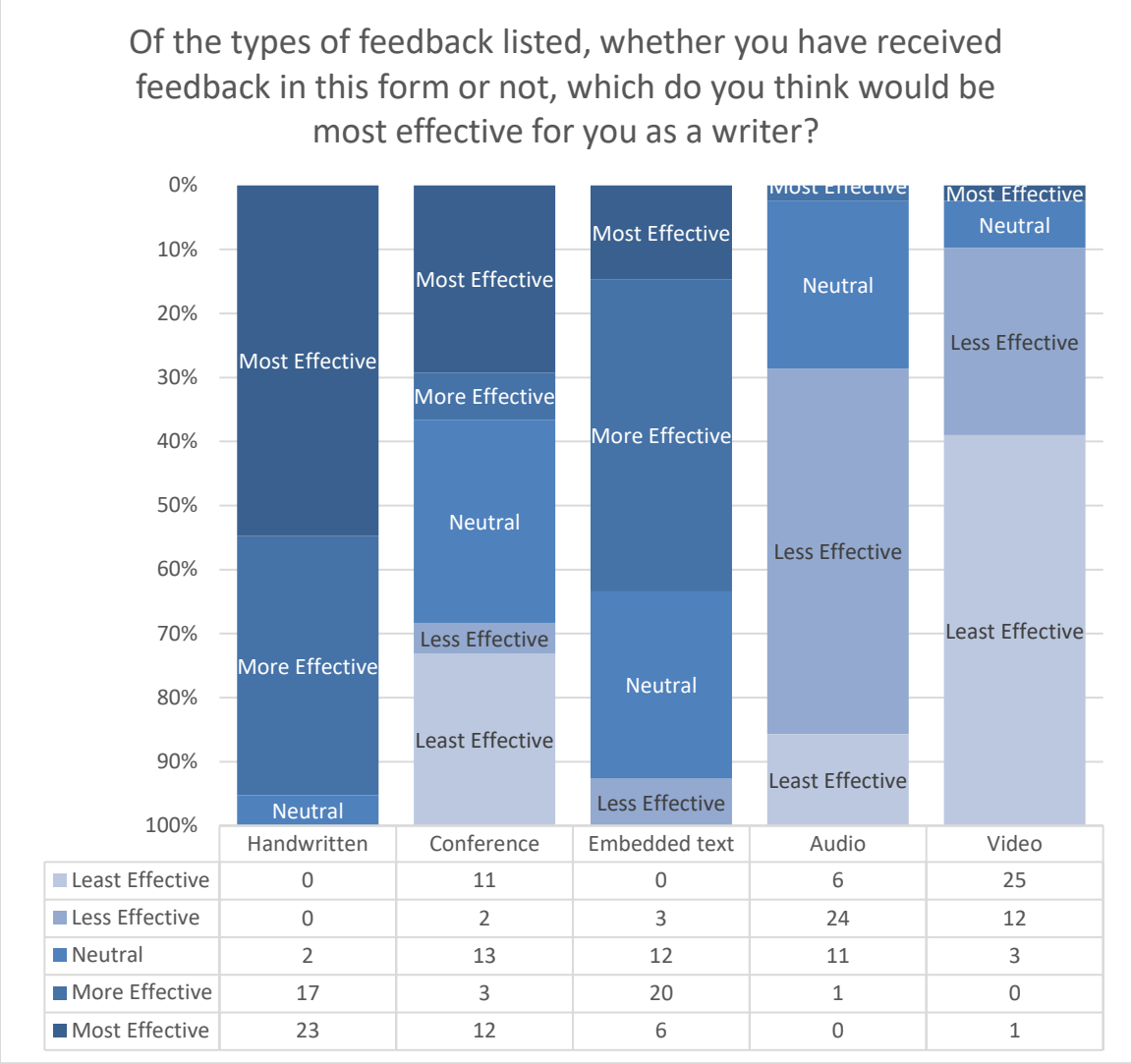


Figure 18: ENGL 2311 Student Survey Past Feedback Media

Given the above options for receiving feedback, respondents were asked to choose and rank the types of feedback they felt would be most effective for them as writers, whether or not

[7] RaiderWriter was discontinued as of Fall 2017.

they had received feedback in that medium. Only 42 participants responded (see Figure 19). All respondents ranked handwritten commentary, embedded text, or instructor conference within their top three choices. Handwritten commentary was ranked highest (*n*=42), with embedded text ranking next (*n*=41), followed by instructor conference (*n*=41). Though no respondents ranked audio best, 26% (*n*=42) ranked it third. "Other" notwithstanding (which was placed in the ranking by nine participants, but not explained), screencasting came in lowest (*n*=41).



	Handwritten	Conference	Embedded text	Audio	Video
Least Effective	0	11	0	6	25
Less Effective	0	2	3	24	12
Neutral	2	13	12	11	3
More Effective	17	3	20	1	0
Most Effective	23	12	6	0	1

Figure 19: ENGL 2311 Student Survey Ranking of Potential Effectiveness of Feedback Styles

In the space provided at the end of the survey inviting comments, one user made a provocative statement: "I find that when an instructor states directly what I did wrong and how I

could improve that is the easiest way for me to improve my writing skills" (ENGL 2311 Student Survey Participant #52). This sentiment seems to imply certain assumptions, namely, that:

- student writing is either "right" or "wrong"—not a consideration of writer's choices that can make a deliverable more or less effective;
- feedback is about "error"; to improve writing, student writers should focus on what is "incorrect," without a consideration of how to build upon or develop their strengths;
- feedback should be instructions for "fixing" one's writing.

Determining whether other students and even instructors may also hold these assumptions will be further explored in the following section.

The 2311 Student Survey results suggest that students have experience with both handwritten and digital text commentary, and they prefer these media for instructor feedback. Face-to-face conferencing, which was a popular "other" explanation in the National Instructor Survey, was an option for students to choose from in this survey, and while the option was not considered as effective as text feedback (handwritten or digital), it still ranked among the top three.

Usability Testing of Instructor Feedback

User testing of instructor feedback was conducted to provide answers to all four research questions:

- How are instructors currently providing feedback to students (what media, content, and style)?
- What experiences with and expectations for feedback do students have?
- How do students typically interact with feedback?

- How might the medium of the feedback impact its usability (how effective, efficient, engaging, error tolerant, and easy to learn it is for students), and why?

Sixteen students participated in this testing. Participants were a sub-sample of the 2311 Student Survey respondents who elected to be contacted to take part in further research. Of the thirty-nine respondents who expressed initial interest, eighteen responded to the query email. There was one no-show and one who was unable to work the testing into his schedule.

The 16 students who participated in testing came from four instructors' classes. Instructor 1 had by far the greatest number of participating students (nine), compared to Instructor 3 (three students) and Instructor 2 and Instructor 4 (two students each). Instructor 1 was a lecturer who was teaching three sections of 2311 that semester; the other instructors taught no more than two sections.

Participants began their test session with a pre-test survey asking questions concerning demographics, experience with writing instruction and feedback, and a learning styles inventory.

Demographics.

These participants ranged in age from 19-24, with 75% (*n*=12) aged 19-21. Participants were evenly divided between males and females (see Figure 20). Most of the participants were sophomores (43.75%; *n*=7) and juniors (37.5%; *n*=6). Only three of the participants were seniors (18.75%). Therefore, the volunteer subsample differed from the larger pool of initial survey respondents in age, gender, and academic year, as well as major concentration. Participants represented five of the university's eleven colleges and schools that offer undergraduate degrees and eight different majors (see Figure 21). Most of these majors either require ENGL 2311 or list it as an elective. Similar to the initial survey respondents, the highest concentrations

of majors were in Chemical Engineering (CHE) and Exercise and Sport Sciences (ESS), but the proportion of CHE students was slightly higher to ESS students (5:4).

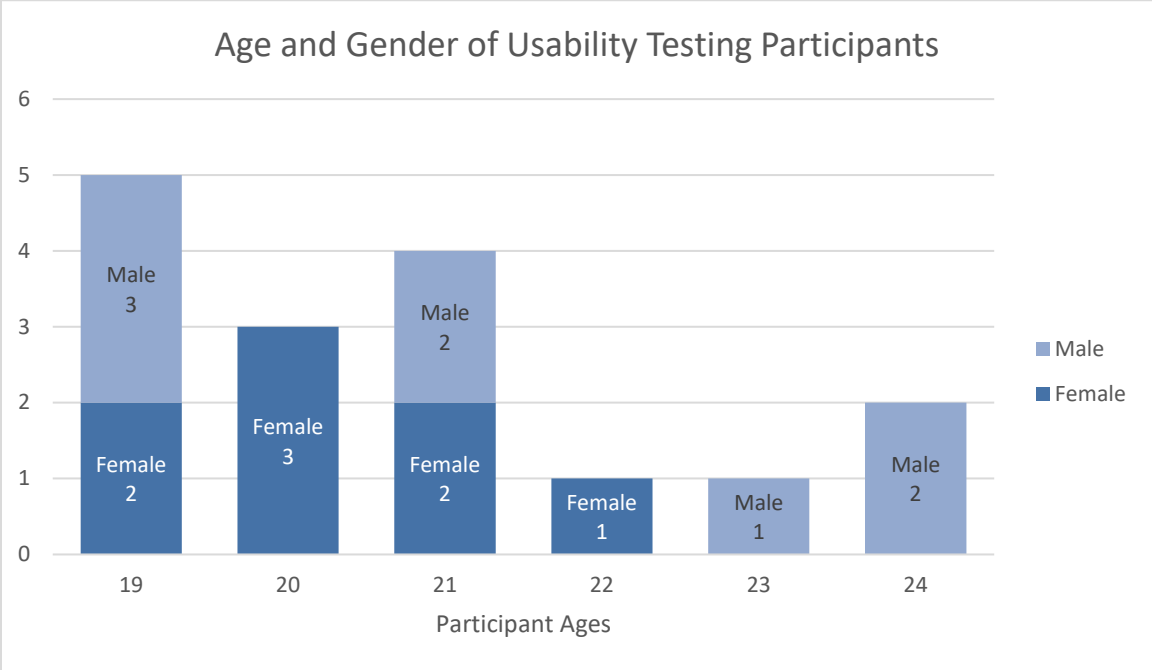


Figure 20: Age and Gender of Usability Testing Participants

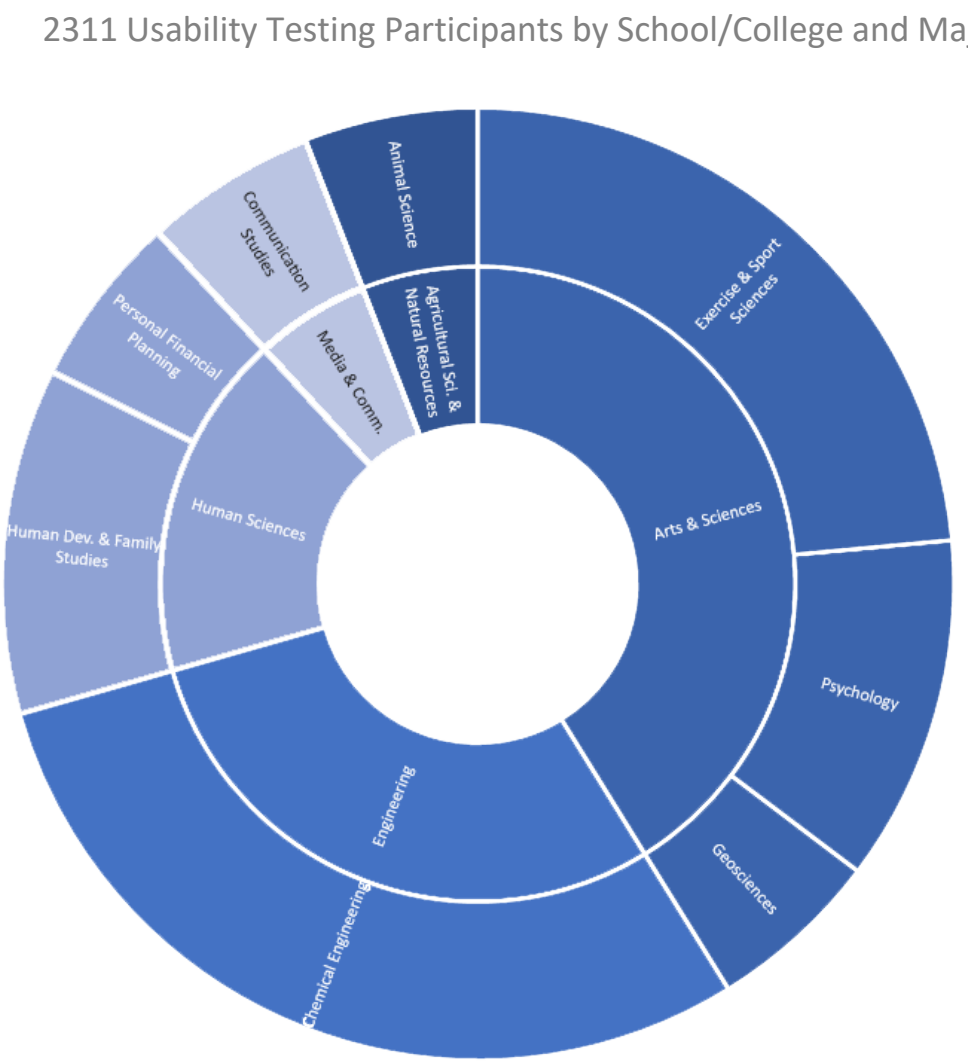


Figure 21: Usability Testing Participation by School/Major

In the pre-test survey, respondents were also asked to rate their level of English fluency. The majority (75%, *n*=12) were native speakers of English; nine of those respondents rated their fluency as Advanced or Superior. Four of the respondents were non-native speakers of English; three rated their fluency as Advanced, and one rated their ability Intermediate.

When asked to rate their writing on a scale of 1-10, most (63%; *n*=) rated themselves at a six or seven, with a mean score of 6.56. Mirroring the survey of 2311 Students as a whole, none of the respondents rated themselves lower than a four. There was little difference in the self-assessment of writing skill between native and non-native English speakers. However, the

lowest self-ranking for writing skills came from native speakers; one who considered themselves Intermediate ranked their writing skills at a five, while two who rated their proficiency as Superior ranked their writing skills at a 4 and a 5 (see Table 2).

Usability Testing Participants: Self-Assessed Language Proficiency and Writing Skill

	Respondents	Skill (Average)
Native speaker of English: Advanced	6	7
Native speaker of English: Intermediate	2	5.5
Native speaker of English: Novice	1	7
Native speaker of English: Superior	3	5.67
Non-native speaker of English: Advanced	3	7
Non-native speaker of English: Intermediate	1	7
Average Skill Rating		**6.5625**

Table 2: Usability Testing Participants' Rating of Skill Grouped by Language Proficiency

Writing instruction experience.

As with the larger student survey, for most respondents, ENGL 2311 was their third college-level writing class (56.25%; *n*=9) (see Figure 16: ENGL 2311 Student Survey Respondents' Number of College-Level Writing Courses Taken.

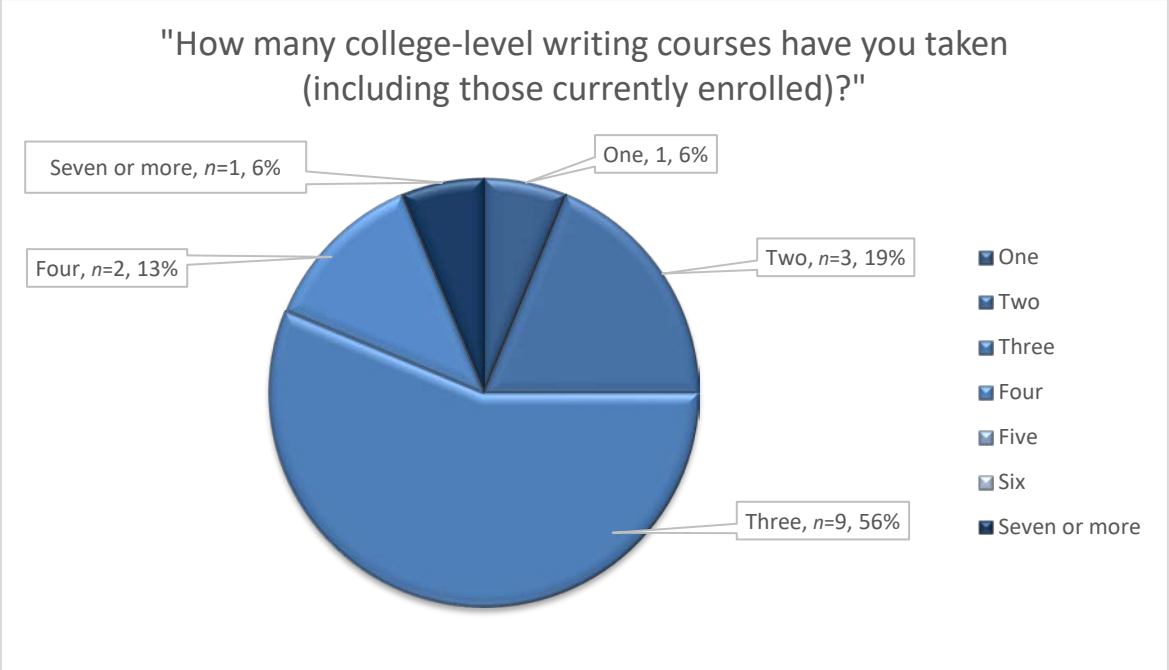
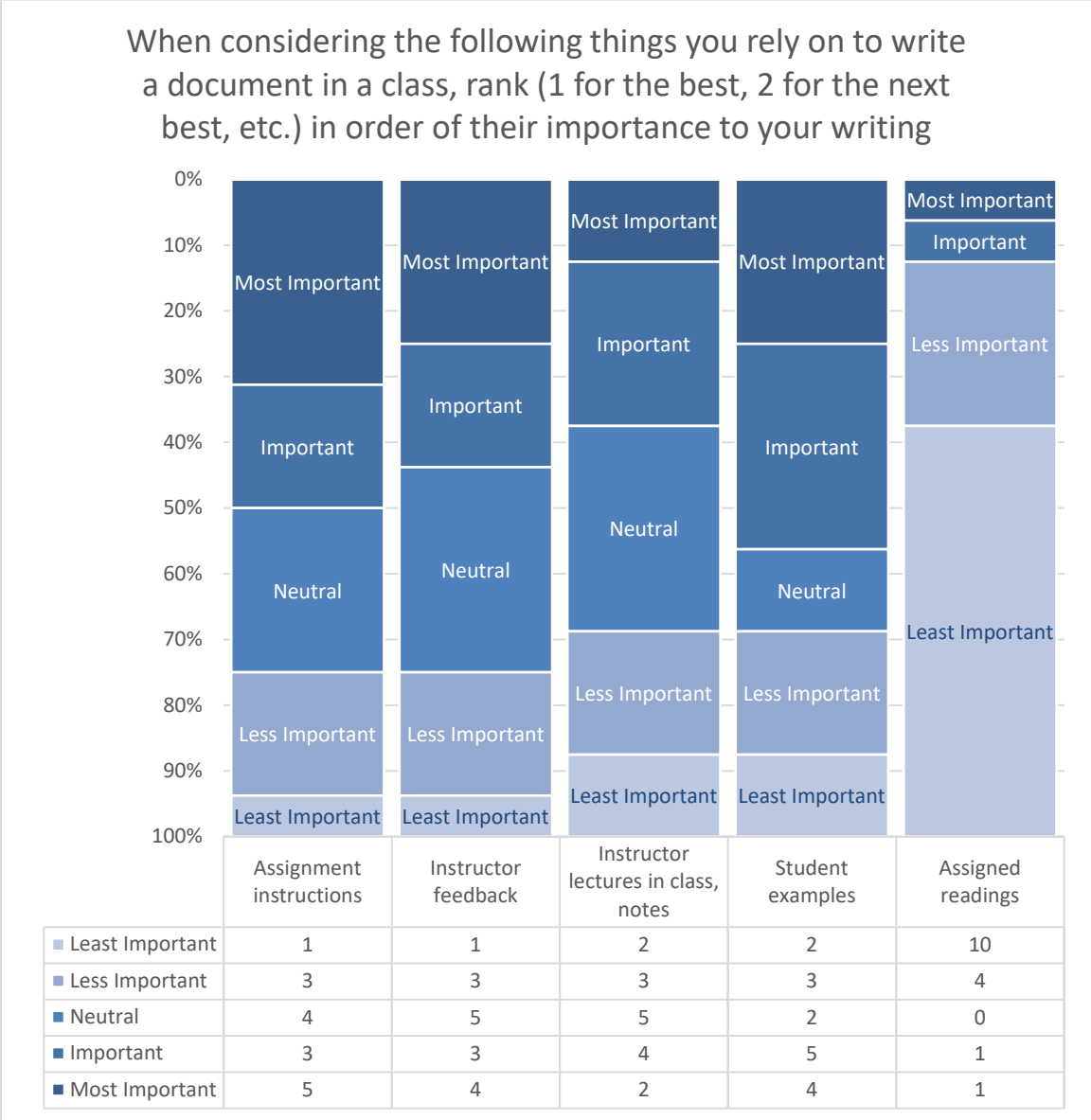


Figure 22: Usability Testing Participants' Number of College-Level Writing Courses Taken

Reflecting the sentiments of the 2311 students surveyed, usability testing participants overwhelmingly felt that instructor feedback (whether on previous work or a draft) was important to their success with writing, with 56% (*n*=9) ranking it most important, and 44% (*n*=7) ranking it as important. Despite this, these respondents rated assignment instructions the highest for writing their documents (average ranking of 2.5 in importance). Instructor feedback and student examples tied in average ranking at 2.63. Again, referring to assigned readings was

typically ranked least important, with an average ranking of 4.31 (see Figure 23).



	Assignment instructions	Instructor feedback	Instructor lectures in class, notes	Student examples	Assigned readings
Least Important	1	1	2	2	10
Less Important	3	3	3	3	4
Neutral	4	5	5	2	0
Important	3	3	4	5	1
Most Important	5	4	2	4	1

Figure 23: Usability Testing Participants' Ranking of Class's Resources for Writing

Regarding the media in which students had previously received feedback in classes, most had experience with handwritten feedback (81%) or embedded text commentary (such as MS Word review functions, Adobe PDF commenting, or RaiderWriter) (75%). Approximately one-third (31%) reported receiving feedback through instructor conference. None of the participants had received feedback with video or audio (see Figure 24). The sole "other"

response indicated that the respondent had not previously received writing feedback.

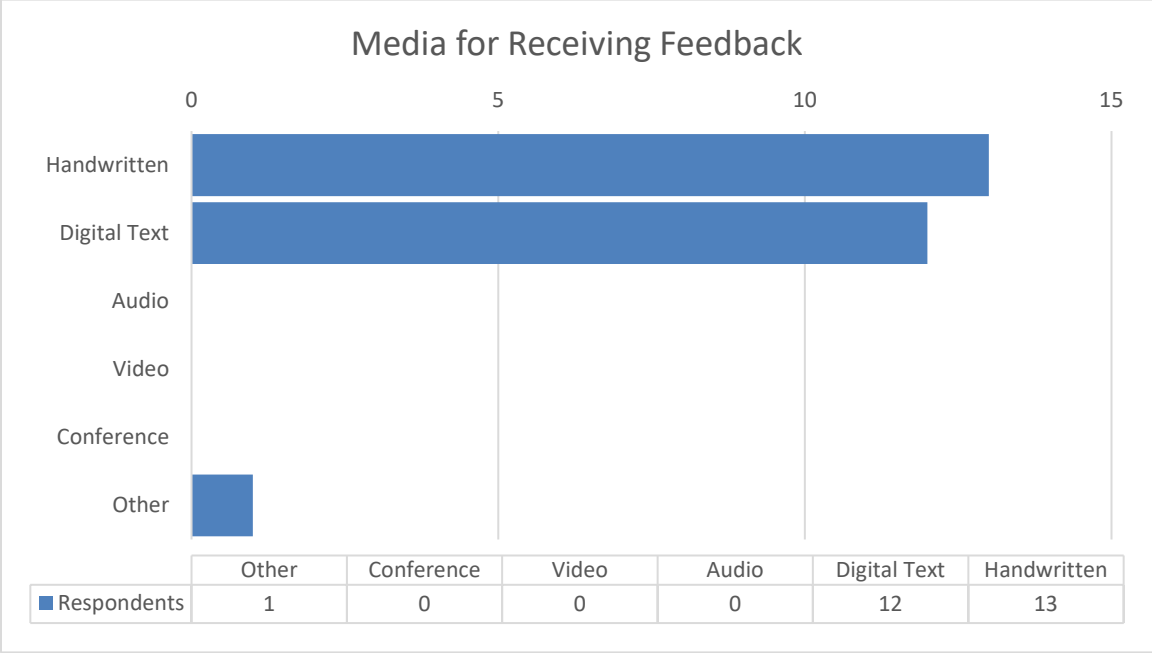
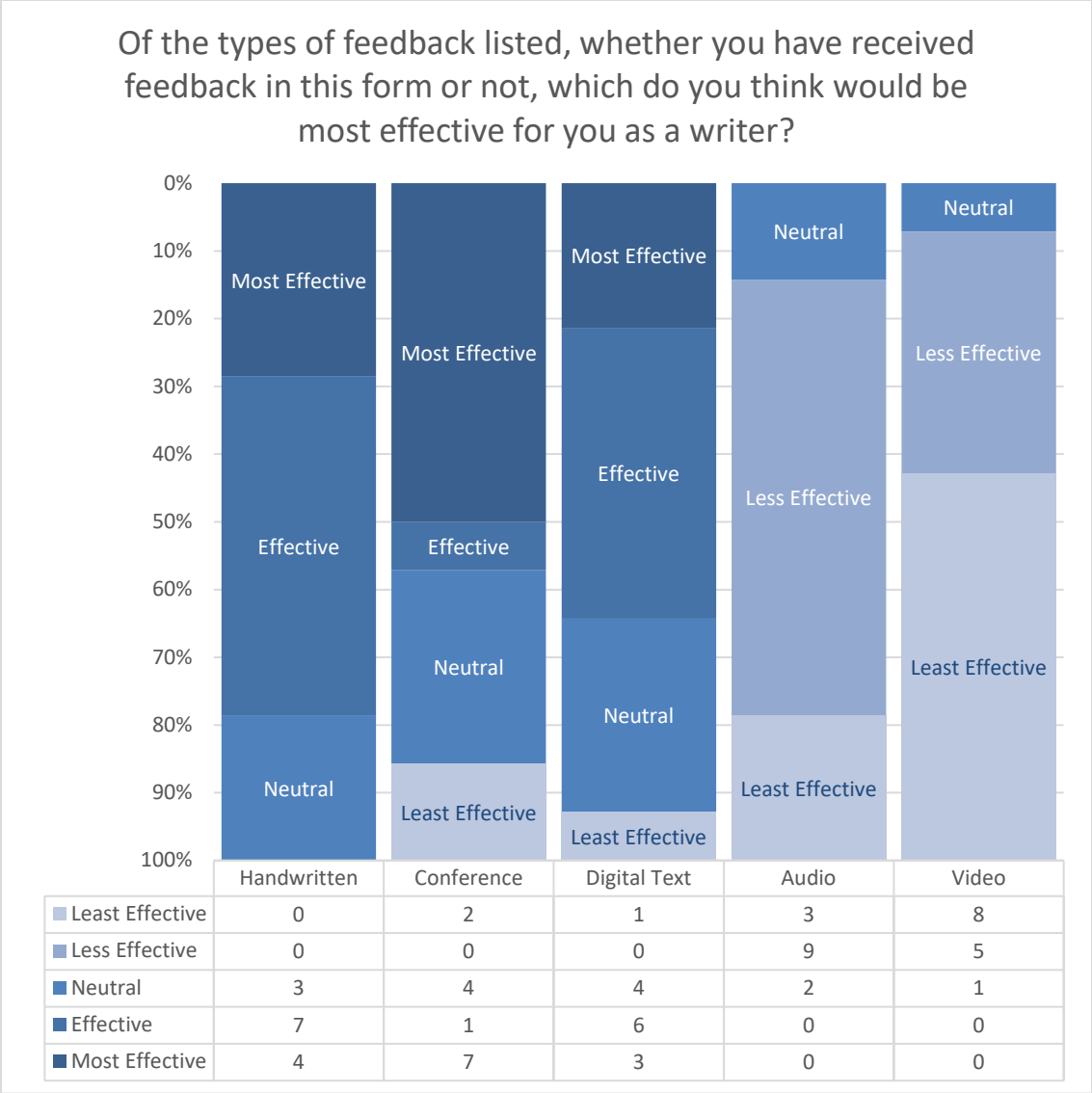


Figure 24: Usability Testing Participants' Past Feedback Media

Given the above options for receiving feedback, respondents were asked to choose and rank the types of feedback they felt would be most effective for them as writers, whether or not they had received feedback in that medium. Fourteen of the participants responded. All respondents ranked handwritten commentary, embedded text, or instructor commentary within their top three choices. Surprisingly, handwritten commentary ranked first or most effective (mean ranking: 1.9), with instructor conference ranking second (2.21), and embedded text third (2.28). Audio and Screencast came last, with a mean ranking approximately two places lower than the other options (4.0 and 4.5 respectively) (see Figure 25).



	Handwritten	Conference	Digital Text	Audio	Video
Least Effective	0	2	1	3	8
Less Effective	0	0	0	9	5
Neutral	3	4	4	2	1
Effective	7	1	6	0	0
Most Effective	4	7	3	0	0

Figure 25: Usability Testing Participants' Ranking of Potential Feedback Media

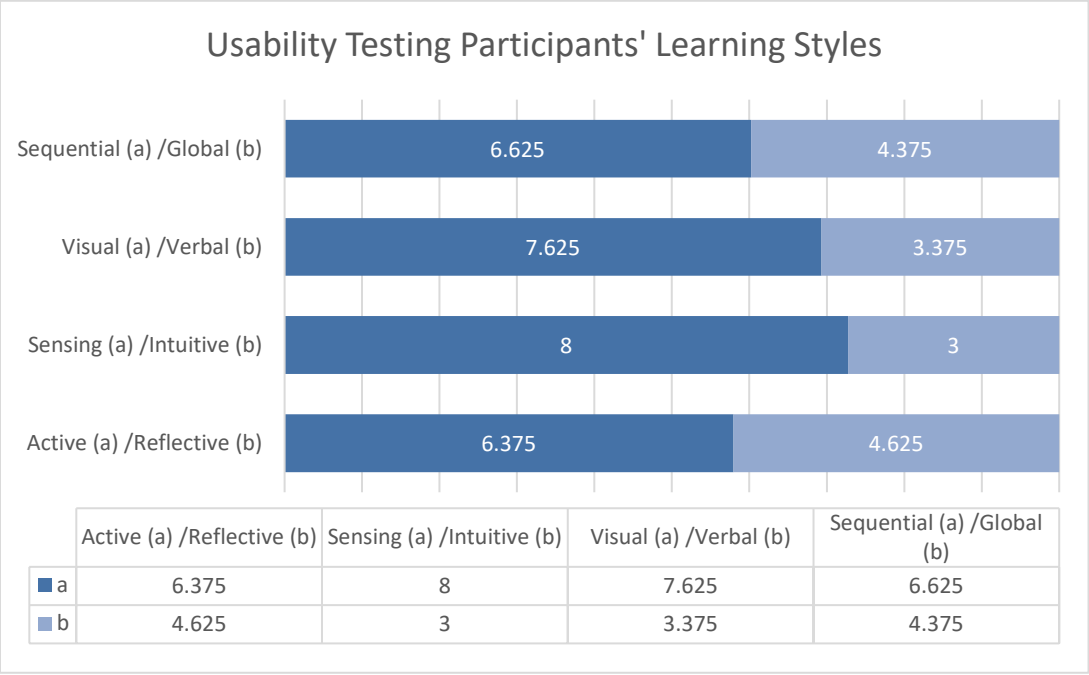
Learning styles inventory.

As part of the usability pre-test, participants were asked to respond to 44 questions to ascertain their learning styles. The purpose of administering this portion of the test was to determine whether a participant's preferred learning style had any correlation to his or her preferences concerning feedback or approaches to review and revision. The diagnostic was originally developed by Felder and Soloman (1991, 1994) and identifies four dimensions of preference for learning:

- Active (application) ←→ Reflective (contemplation)
    - Active learners are individuals who learn best by applying or discussing information; they tend to prefer working with partners or in groups.
    - Reflective learners may be more solitary (e.g., preferring individual study sessions to group study) and usually learn best when given time to consider and process information.
- Sensing (facts) ←→ Intuitive (abstract)
    - Sensing learners prefer memorizing facts and discrete processes, even when these processes may be repetitive. This type of learner will best engage with information that is presented as practical knowledge with "real world" application. This type of learner may be less interested in the "why" than in the "how."
    - Intuitive learners prefer concepts or the abstract (some might say theory-based) that they can then connect to other concepts or reframe to different situations. This type of learner would rather understand the "why" as a path to discovering the "how" independently.
- Visual (graphic) ←→ Verbal (language)
    - Visual learners, as the term states, learn information best from data visualizations such as charts, infographics, even video. In essence, they prefer to "see" the information and its potential relationships to other information.
    - Verbal learners, as can be inferred, prefer to learn through language, whether spoken or written.
- Sequential (linear steps) ←→ Global (big picture)

- Sequential learners prefer a scaffolding approach and can find a logical connection to each step. It is not necessary for them to understand how the entire concept comes together to feel they have a grasp on the concept, at least in part.
- Global learners, in comparison, may be able to follow the steps, but do not easily grasp the information until they can understand how the process or concept comes together.

Learning style preferences were determined on a scale of 1-11. According to Felder and Soloman, a score of 1-3 indicates a balance, 5-7 a moderate preference, and 9-11 a strong preference. In aggregate, participants moderately preferred Active, Sensing, Visual, and Sequential styles of learning (see Figure 26).



	Active (a) /Reflective (b)	Sensing (a) /Intuitive (b)	Visual (a) /Verbal (b)	Sequential (a) /Global (b)
a	6.375	8	7.625	6.625
b	4.625	3	3.375	4.375

Figure 26: Usability Testing Participants' Learning Styles

Given the participants' preferred styles of learning, certain assumptions could be made regarding this group of students' reception and application of instructor feedback (and, it is

important to note that these assumptions are based on the average, not individual, scores). In receiving feedback, screencasting might appeal to these learners' preferences for active, visual, and sequential modes of instruction. While video feedback scored lowest in the participants' hypothetical rankings of feedback media, none of the participants had any experience with it. Given their moderate orientation towards active, visual, and sequential methods of instruction, the possibility of seeing and experiencing their instructor "move" through their writing might better match their learning styles. This group, as well, would arguably prefer feedback that is more "step-by-step" (sequential) and rule-based (sensing or factual) than holistic (global) and concerned with factors such as style (intuitive or conceptual).

To test these assumptions, statements made by individual users during the testing session and in the post-test interview were coded according to learning styles. For example, User 9's comment,

> I think that having what they wrote and then talking one-on-one [about] what they wrote and then what I think they wrote, if it matches up then... Does that make sense? I'm just a person who likes to interact in person.

was coded as an Active learning style statement, as this style prefers learning by interacting with information through discussion or application. At the other end of the scale is the Reflective style, which often learns better through solitary (as opposed to social) tasks such as reviewing, journaling, or composing summaries. This preference is demonstrated in User 11's observation, "I learn better whenever I write. So if I can write it down and see what I need to fix, I won't go back. But sometimes I might write it down wrong, so I check the comments again before I submit it."

In total, 104 statements were coded as indicating a learning style preference. Users 10 and 13 made no statements that indicated a learning style preference. Users 9 and 15 made the

most, with 11 statements each. Because of neither the talk-aloud protocol nor the interview questions were designed to elicit responses that specifically addressed learning styles, not all dimensions were represented for each user. To attempt to minimize bias, I did not review the results of each user's learning styles inventory until after coding the tasks and interviews.

The findings were, at best, interesting. They were often suggestive of potential correlations between the learning studies inventory results and stated preferences, but these could have been coincidental. User 1, for example, scored an 11 (the highest possible) for both Sensing and Visual. In the talk-aloud protocol and interviews, the user made three statements that referenced learning styles, coded as two Sensing statements and one Visual statement. With all but one of the users, when there was a strong preference for a particular learning style (scoring 9 or higher) in the inventory, if a comment was made addressing that dimension, it correlated with the inventory result. When the inventory score was on the low end of the moderate preference (a 5 or 6 out of 11), there was no consistent relationship. In 6 of the 11 instances, the coded comments did not align to the inventory score.

User Testing and Tasks.

Following the pre-test survey, participants began the usability test. The scenario for this test was as follows:

> As a student in English 2311, you have recently completed an assignment and your instructor has provided feedback. Various tasks will show up on the screen before you; please complete the tasks requested, explaining what you're doing out loud while you're doing it. If at any time you need the task repeated, let me know and I will repeat the task description for you.

Users were asked to complete four tasks: access their instructor's feedback on the job application assignment, review the feedback, compose a revision list based on their instructor's commentary, and then prioritize that list in order of importance. Data was collected via observation, video recording, and collection of three sets of artifacts (deliverable with instructor comments and grading rubric, initial revision plan, and prioritized revision plan).

Task 1: Accessing the assignment.

The first task that participants were asked to complete was to access their instructor's feedback on the job application assignment. This type of task is one that students would normally do in a class. The task, as with all during testing, appeared in a text box in Morae and was read by me, the facilitator, during the test session. The scenario was framed as:

> Your instructor has finished grading your assignment, and you want to access the feedback. Go to Blackboard and access your assignment. Please talk aloud about what you are doing as you go through each step.

Participants took multiple paths to accessing Blackboard and the assignment. The most direct path would be to type in the URL http://ttu.blackboard.com, enter login information, click on "My Grades" in the left-most column "Tools," then select the hyperlinked assignment name. Most students, however, began by using the search term "Blackboard" in Google, selecting the Blackboard information page hosted by TTU, then clicking on the link for Blackboard, logging in, then either clicking on "My Grades" or going to their class and clicking on "My Grades." However, from talk-aloud comments, this longer process was due to the laboratory environment. Students were not at their own computers with the Blackboard link bookmarked or cached for quicker access.

Once participants were at the “My Grades” screen, they would need to click on the assignment link to view their instructor’s comments both in and on their assignment. Blackboard is designed so that students can quickly view their grades and then opt to click through for further information, either by clicking on the assignment link for the submission with inline commentary and a text box that is labeled “Feedback to Learner,” or clicking on a text balloon icon to the left of the grade that provides the feedback to learner only (see Figure 27). User 6 experienced a severe error during this task, clicking only on the text balloon, seeing only the holistic comment and rubric, then stating, “If [Instructor 1] could have elaborated more.” I asked, “Is this the only place you have feedback on the assignment?” The user responded, “That’s the only way I’ve ever done it.” I prompted User 6 to click on the assignment hyperlink, to which he said, “Oh! Cool!” Without participant prompting, the user would have assumed that the feedback provided was only in the text box, not knowing that inline comments were embedded in the document itself.

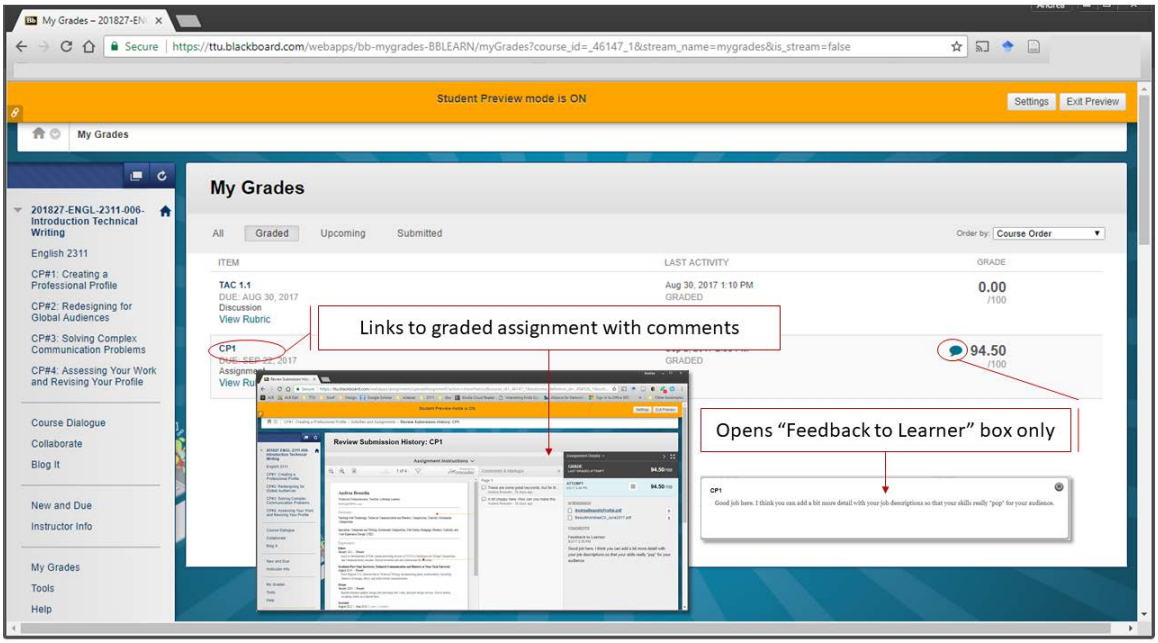


Figure 27: "My Grades" screen in Blackboard. [8]

Four users did not have access to feedback. Instructor 2 had created screencasts but had inadvertently hidden the ability to view grades for that assignment in Blackboard. When Users 8 and 13 attempted to access their assignments, Blackboard indicated they had not been graded, although they had. Two of Instructor 3's students (Users 1 and 2) had not had their assignment graded at the time of testing. These four users averaged significantly higher times on task (112 seconds or nearly two minutes) searching for comments in comparison to the other eight users,

[8] Because screen captures from the test sessions include identifying features such as student and instructor names, screenshots were created with a demo user account.

who averaged 66 seconds, or a little over a minute, for this task (see Figure 28).

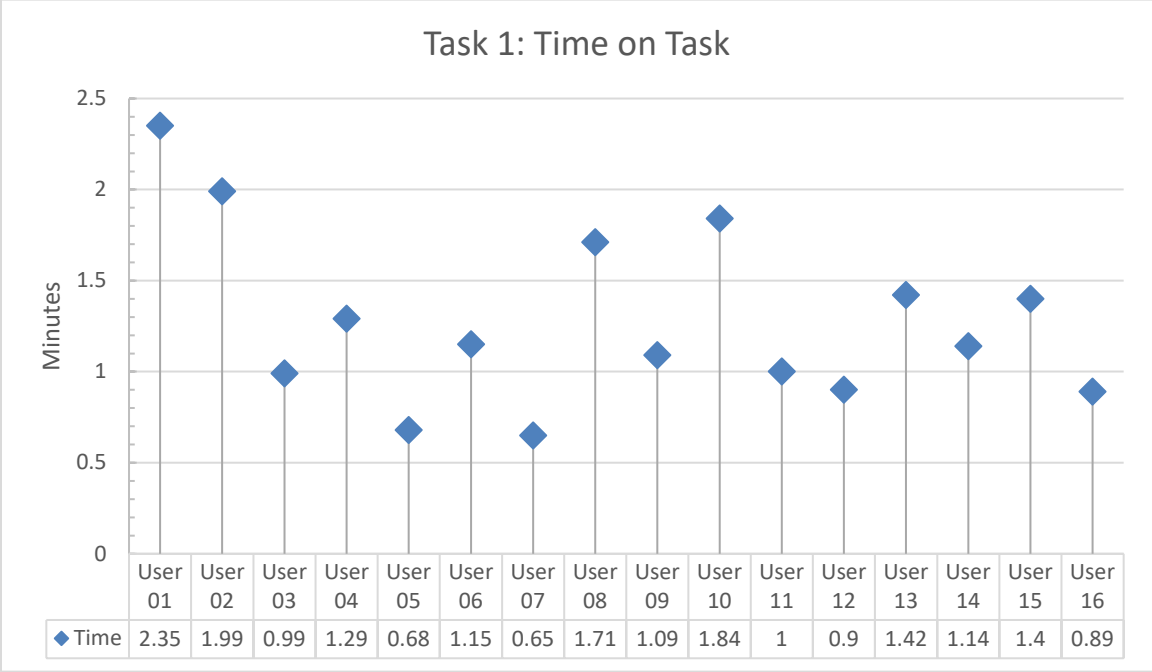


Figure 28: Task 1 Time on Task

Although all instructors who participated in this study were given the option to provide veedback (and with that option, were offered training as to how), Instructor 2 was the only one who chose to do so. The instructors who used embedded text in Blackboard as the medium for comments were either dissertating graduate students or recent PhDs on the market. While they expressed interest in trying out a new (to them) technique, they did not believe that they had adequate time and energy to learn and implement a new method. Finishing a dissertation and/or being on the job market in addition to teaching at least two sections of a writing-intensive class was already a considerable workload. Instructor 2, a full-time lecturer with continuing employment, had different time and word demands.

Successfully completing Task 1 was necessary to progress to Task 2. Of the 16 total participants, 12 were able to complete the first task, though User 6's ability to do so would have been impeded had I not intervened.

Task 2: Reviewing Feedback

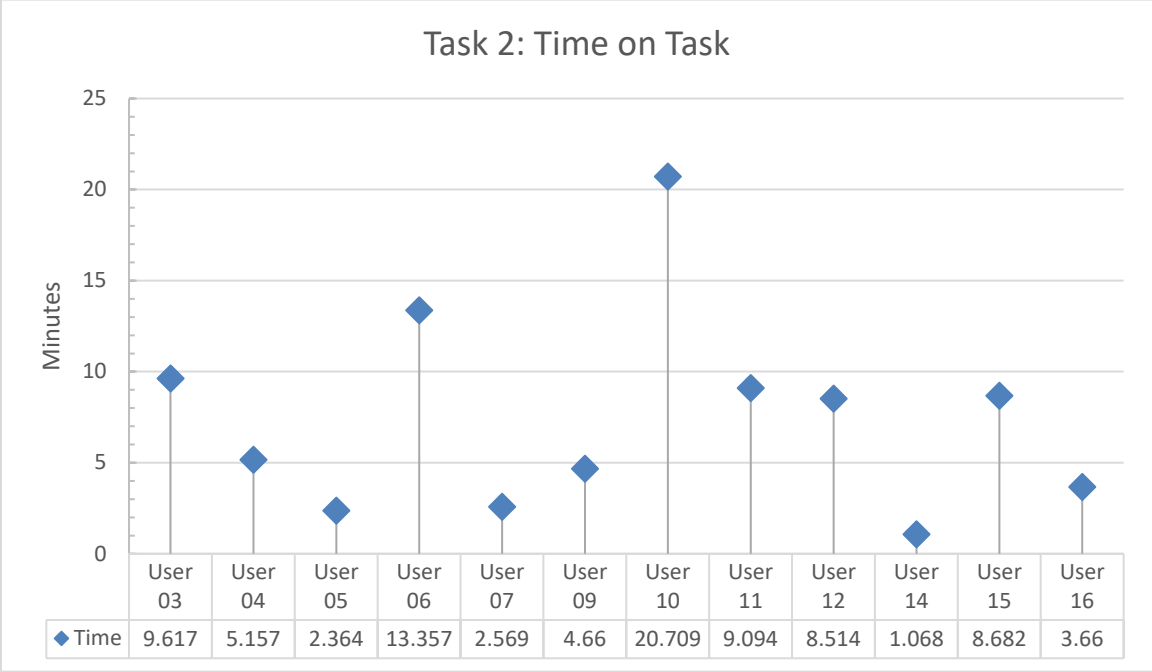
As noted previously, only 12 of the 16 participants were able to complete the first task, which was a prerequisite to beginning Task 2. The second task asked participants to review their instructor's comments on the job application assignment. The scenario was phrased as follows:

> You want to review your instructor's feedback on the assignment—his/her comments. Review your instructor's comments on the assignment; if you'd like, you can take notes using the pen and paper provided. Please talk aloud about what you are doing as you go through each step.

This task would be considered a typical or normal activity for students to engage in. Even when students earn a high grade on an assignment, they will often at least skim over an instructor's comments and notations. This scenario, as well as those in tasks 3 and 4, were designed to answer the third research question: how do students typically interact with instructor feedback?

On average, it took users 418 seconds, or nearly seven minutes, to review their instructor's comments. However, individual times varied widely, from approximately one

minute for User 14 to nearly 20 minutes for User 10 (see **Error! Reference source not found.**).



This variation appears to derive from the multiple types of information contained within each comment rather than the number of individual comments. Each user's graded submission was coded as to the category of comments and annotations:

- **Content**: Concerns such issues as support, evidence, and development
- **Design**: Concerns page layout, use of headings, color, graphics, alignment, navigation, and other visual elements
- **Genre**: Concerns reader expectations or norms concerning information included in and placement of information in resumes and cover letters
- **Grammar**: Concerns proper usage, punctuation, and mechanics
- **Structure**: Concerns overall document organization as well as logical development within sections, paragraphs, and sentences
- **Style**: Concerns tone, diction, and conciseness
- **Comprehensive**: General evaluation of submission, e.g., "good job."

Most instructors wrote between one and three comprehensive statements on the submissions: one holistic statement preceding the rubric; a holistic statement at the end of the job letter and the resume (meaning two statements total); or three holistic statements, one for the job letter, one for the resume, and one for the assignment. Instructors' comprehensive statements were not factored in, as these were non-specific in nature; typical statements were "Great job on your assignment!" or "You have a good letter here." By far, design was most frequently noted by instructors: all of the participants had design noted on their submissions, and 57 notations were made in this category, accounting for

22% of all notations (see Figure 29).

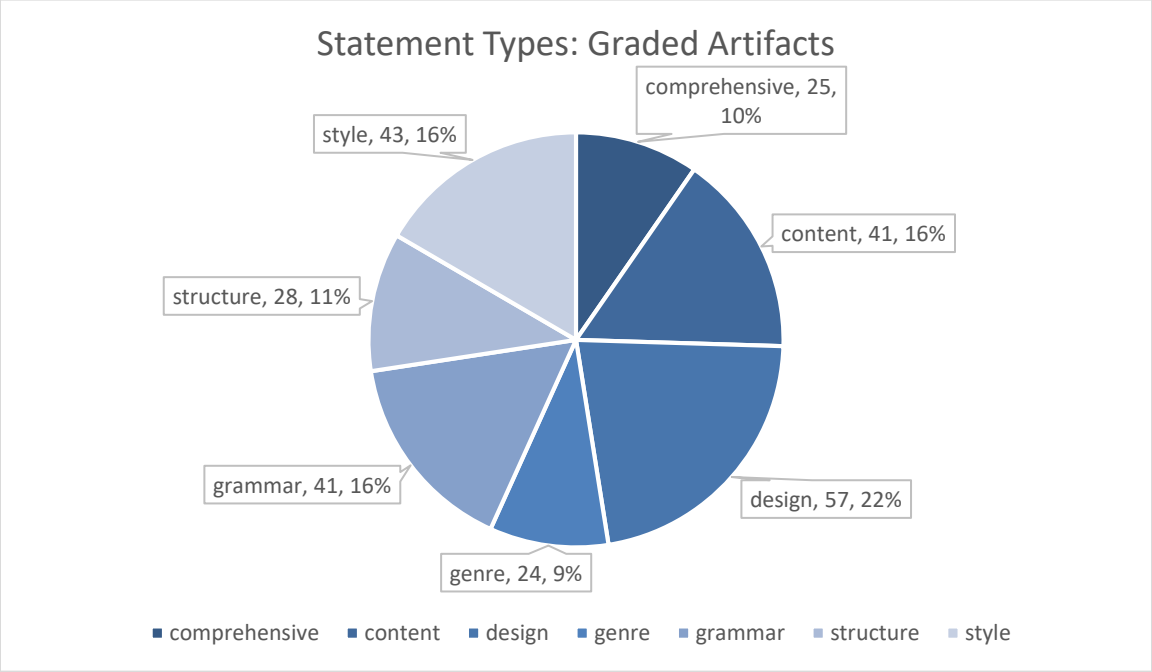


Figure 29: Statements Types for Graded Artifacts

Individual instructor comments often addressed multiple considerations or types of issues. For example, one of Instructor 1's comments on User 11's resume was "Usually the college goes first and gets the 'header 2' classification. Then, put your degree information as the first bullet." This statement refers to both genre conventions and design. Instructor 3's comment on User 15's cover letter provides another example of multiple considerations contained within one comment:

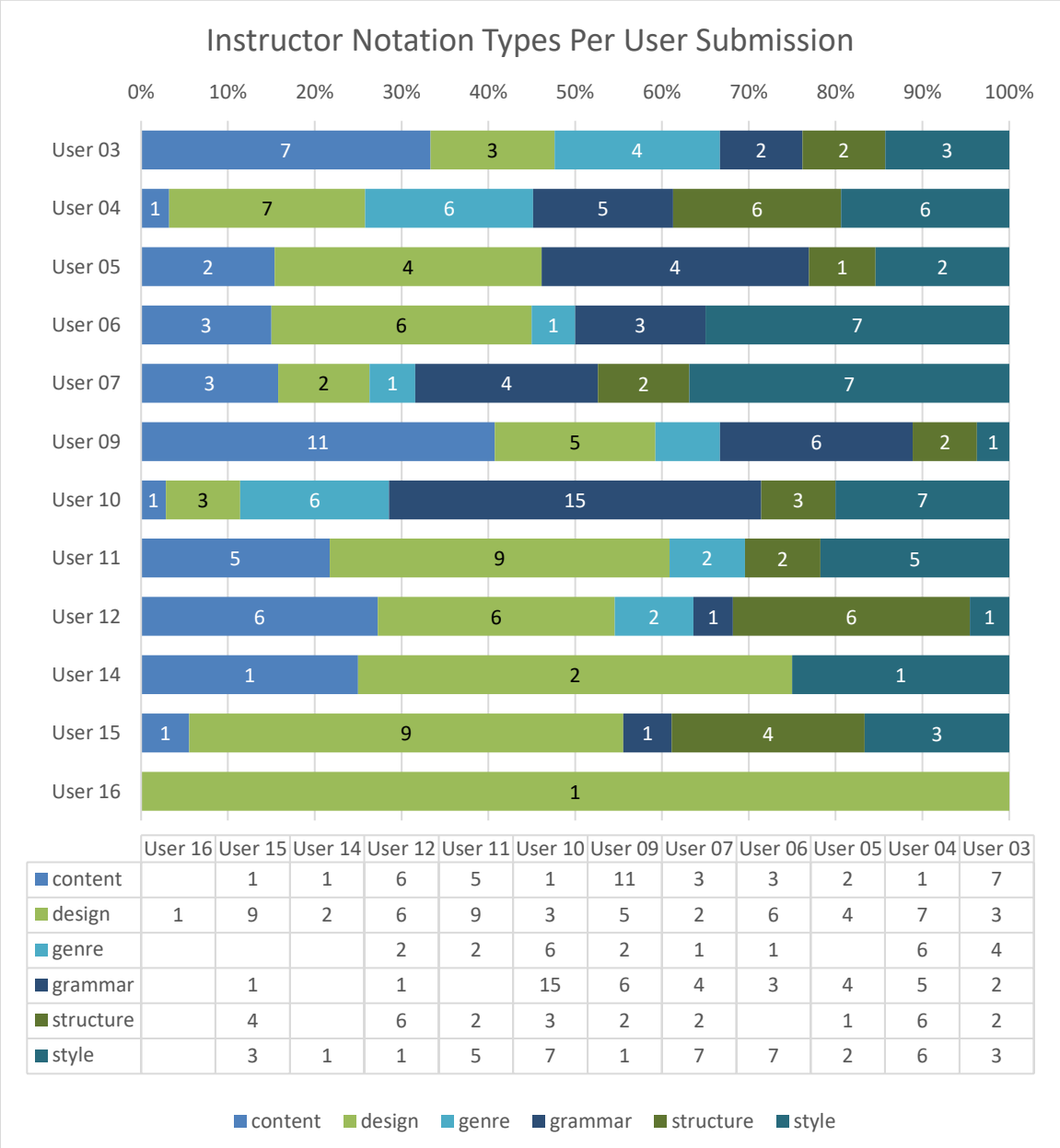
> Bad start. If you are having trouble coming up with a different way to begin, let's talk about it and come up with something stronger. Right now, we need a more approachable intro that doesn't have a grammatical error in it.

This statement indicates issues with style as well as grammar. Granted, holistic comments at the end of each part of the assignment deliverables (meaning a general comment on the cover

letter overall and another general comment on the resume) typically addressed multiple areas. Instructor 1's holistic comment at the end of the cover letter was:

> This letter is pretty good [U03]. It is organized well, makes the important writing moves the letter ought to, and is designed well. I think the last two body paragraphs need some work, and I gave you suggestions for how to eliminate unnecessary language so your sentences are more readable.

This single comment addresses structure, genre, design, content, and style. Figure 30 illustrates the total number of notation types per user (minus comprehensive statements) as a percentage of overall comments received.



	User 16	User 15	User 14	User 12	User 11	User 10	User 09	User 07	User 06	User 05	User 04	User 03
content		1	1	6	5	1	11	3	3	2	1	7
design	1	9	2	6	9	3	5	2	6	4	7	3
genre				2	2	6	2	1	1		6	4
grammar		1		1		15	6	4	3	4	5	2
structure		4		6	2	3	2	2		1	6	2
style		3	1	1	5	7	1	7	7	2	6	3

Figure 30: Instructor Notation Types Per User Submission

Users averaged 13.3 written comments on their assignments, with approximately 21.6 statement types and direct edits such as insertions and deletions. Without the direct edits, users

averaged 19.5 statement types on their assignments, with an approximate ratio of 1.5 statement types per comment.

User 10 spent proportionally longer reviewing instructor commentary (averaging 20 seconds per content statement) in proportion to instructor comments. User 16 had two instructor comments on the submission, containing a total of four types of notations. These were reviewed within the average range for most users of 7.8 seconds per notation; what added to User 16's overall time was looking for *more*. The user downloaded the submission file to check if comments were embedded in the original Word document. User 6's and 10's proportionally higher times on task, however, while outliers, demonstrated an unanticipated usability issue that was revealed during testing: working within Blackboard itself.

In the planning and assumptive stages of test, I had thought that potential codes I would employ would solely address the participants' responses to their instructors' comments. I was wrong. An altogether different theme quickly emerged: users' frustration with the Blackboard interface. Figure 31 provides a screenshot of the default view that users are greeted with when they access the "Review Submission History" screen by clicking on the assignment link in "My Grades" The interface has four columns (L-R): the Blackboard course menu; the submitted assignment with arrows and dotted lines leading to instructor text comments; "Comments & Markups," which duplicates the comments and also indicates cross-outs, highlights, and insertions; and the grading panel, which contains the grade for the attempt, links to initial submissions, and overall (or holistic) feedback to the learner.

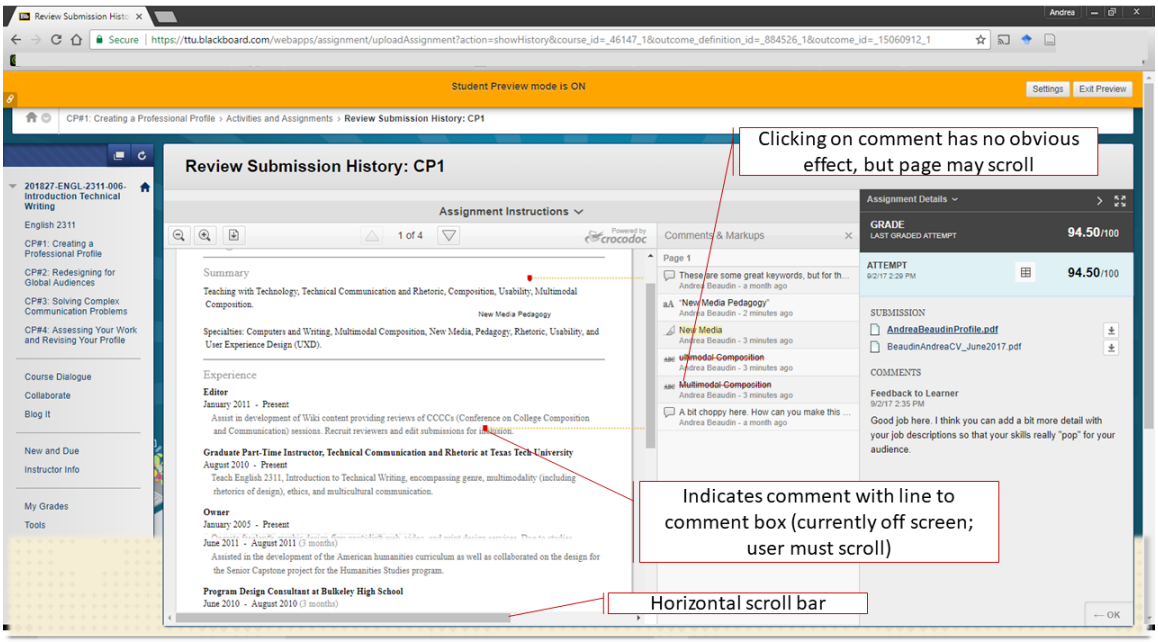


Figure 31: Default Review Submission History Screen in Blackboard

Users expressed frustration with the layout itself. User 15 stated, "I literally hate the layout of this page." Part of this frustration was not knowing that columns could be collapsed to provide more room for viewing the graded document. Different icons and processes achieve this, depending upon the column (see Figure 32). To collapse the course menu, the user must hover over the right vertical border for a left arrow to appear with the help text, "Hide Course Menu." To collapse "Columns & Markups," the user must click an "X" on the top right of that column; there is no help text. To collapse the grading panel, the user must click on the right angle bracket in the top right corner of that column. Hovering over the icon brings up the help text, "Click to expand/collapse grading panel."

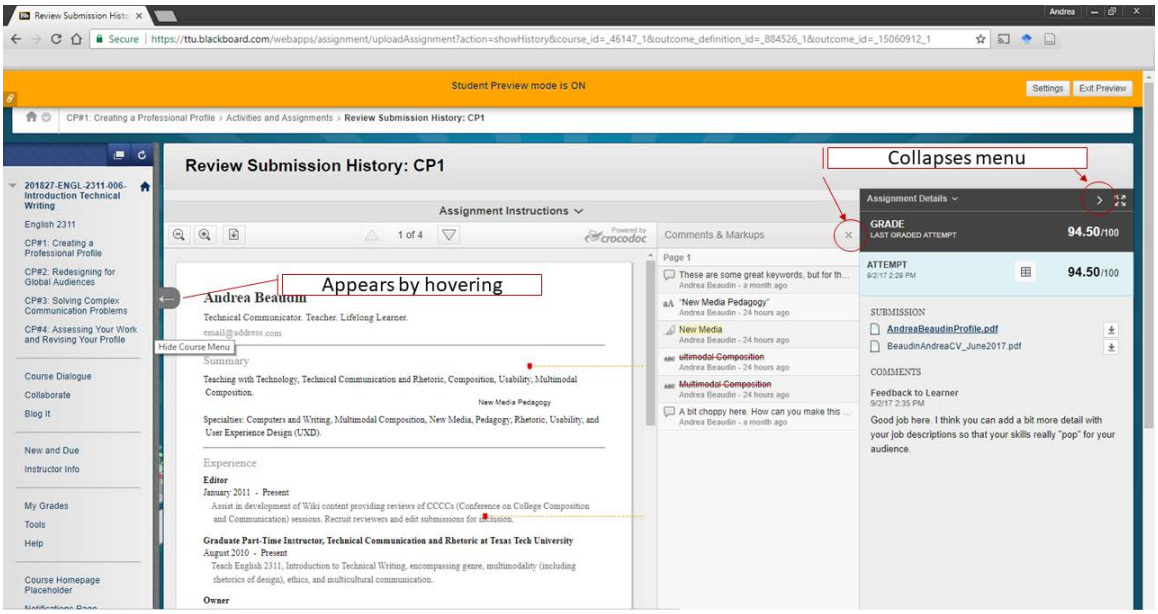


Figure 32: Options for Hiding Columns in "Review Submission History"

Although collapsing columns might ease the review process for some users, collapsing "Comments & Markups" may result in losing information that is not otherwise available in the screen. While the markups are visually indicated in the "Comments & Markups" column (e.g., text may be highlighted or crossed out), they are not in the graded text of the submission itself (the column immediately to the left), although the instructor's comments are included. Even when the "Comments & Markups" panel is open, finding where in the document the notation is referring to is a challenge. Clicking on a comment in "Comments & Markups" may cause vertical scrolling towards the area the comment is referencing, but other than that, there is no visual indication of where the reader should be focusing in the document (such as highlighting the area in question). During the review process, users made statements regarding the interface such as "I don't know what part of the assignment [Instructor 1 is] talking about" (User 10) and "So right now I'm trying to figure out what comments go with what page. . . I'm just a little bit confused because I can't see exactly what [Instructor 1 is] pointing to on this" (User 3). User 6 repeatedly clicked on the notations in the "Comments & Markups" column to try to see what

they referenced. User 11 confessed, “I tried to access before but I couldn't easily figure out how to look at my comments and stuff, but [Instructor 1] told us to push that aside [referencing grading panel] to look at it.”

Except for User 11, who had specifically asked her instructor how to view comments prior to testing, users engaged in a process of tentative clicking and then scrolling. After two minutes attempting to determine which comments applied to what in her submission, User 3 requested help and was directed to check out the icons on the Blackboard screen. She had difficulty interpreting what the icons represented (“there’s a triangle…”—referring to the “page down” icon). After another minute spent attempting to figure out how to increase the viewing area, I pointed out the right-angle bracket that collapsed the grading panel. User 3 still had difficulty, however, with determining where notations in the “Comments & Markups” column were referring to in the submission. Only User 9 figured out how to collapse a column (“Comments & Markups”) without requesting help.

Two users attempted to download the annotated document for viewing; both were unsuccessful. Users 9 and 16 initially opted to download the document linked in the grading panel, which was their original submission. When they reviewed the document, they realized that the instructor’s notation was not included. User 16, who only had two comments on his submission, did not explore further. User 9 continued to explore the interface and found the download icon in the annotated submission screen, but that icon leads to two options: “Download file” or “Download annotated PDF” (see Figure 33). Only “Download annotated PDF” includes the comments; while this is noted in the italicized text beneath the linked option, the user either did not notice or did not understand the distinction. She selected the first option in

the dialogue box and was frustrated because it did not include the instructor's notations.

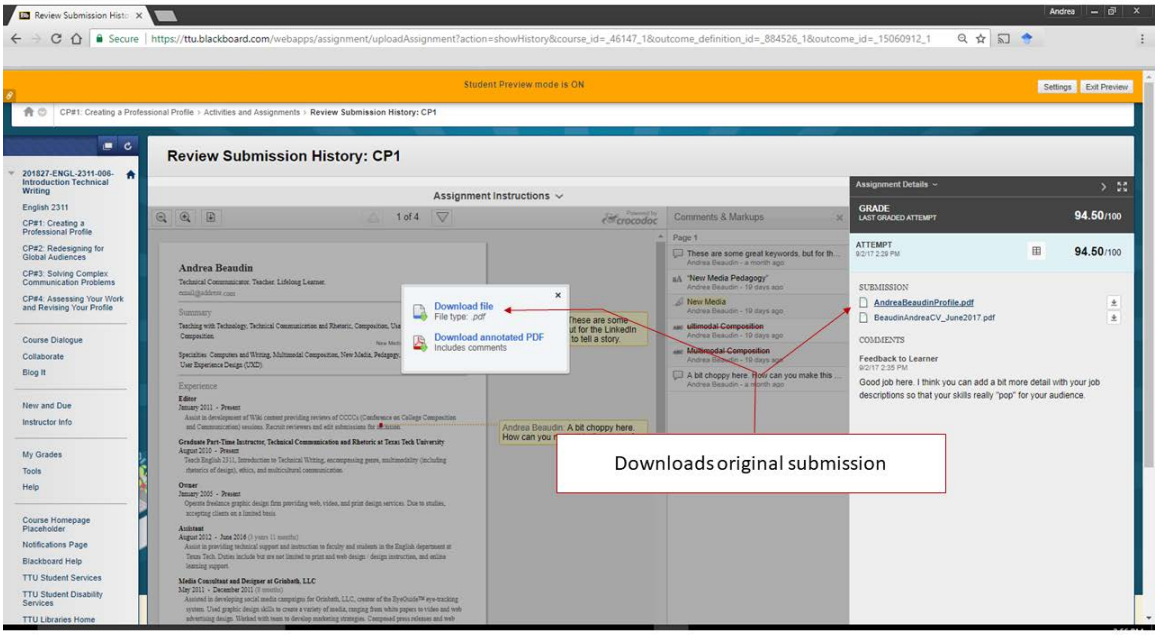


Figure 33: Assignment Download Options

For users, difficulty and frustration arose from the constant process of scrolling vertically then horizontally to view the width of the page. User 10, one of the users who spent the most time proportional to notations reviewing the instructor's feedback, scrolled back and forth horizontally 12 times within one minute. User 3 tried zooming in and out on the submission using the magnifying glass icon, and repeatedly scrolled horizontally, making two statements during the task that she couldn't tell where the instructor's comments were referring to. Users 6, 9, and 16 tried clicking on the items in the "Comments & Markups" column to try to find out what they referenced—with no discernible effect. During Task 2, the majority of participants (75%, *n*=9) expressed difficulty and frustration reviewing the assignment because of the Blackboard interface.[9]

[9] Comparing the frequency of mouse movement for this task would have provided an interesting data point for analysis, however, during testing, Morae did not record mouse movement for Users 4 and 11, and crashed, requiring a reboot, during User 16's session.

Despite the participants' issues with the technology, users were able to engage with the commentary effectively, meaning that overall, they understood what the instructors had noted in the text and why. Users' talk-aloud statements concerning feedback were reviewed and analyzed for themes, resulting in the following coding schema (Figure 34):

Category	Description	Example
Agreement	User stated instructor comment was valid and/or useful.	"Well that's a good suggestion. Page numbers." (User 15)
Disagreement	User stated instructor comment was incorrect or did not take all factors into consideration.	"[Instructor 1] said to put it in one column, but if i did it would be too long." (User 4)
Hindsight	User either recognized issue after submitting the assignment, or made what they considered a "thoughtless" error because of inadequate proofreading.	"Where it says to include Mr.—I think I could have automatically have done that." (User 6)
Confusion	User did not understand the issue the instructor noted.	"I don't know what that means." (User 11)

Figure 34: Coding Schema for TAP Statements Concerning Instructor Comments

During Task 2, all but two of the participants (Users 14 and 16) made statements concerning instructor's comments. Users 14 and 16 were Instructor 4's students; Instructor 4 required students to use MS Word's commenting function to indicate where key genre components were fulfilled (see Figure 35). As the only two participants from Instructor 4's classes, Users 14 and 16 had the fewest number of instructor comments on their submissions (two comments each).

These comments were extremely brief individual comprehensive statements as to the cover letter and resume.

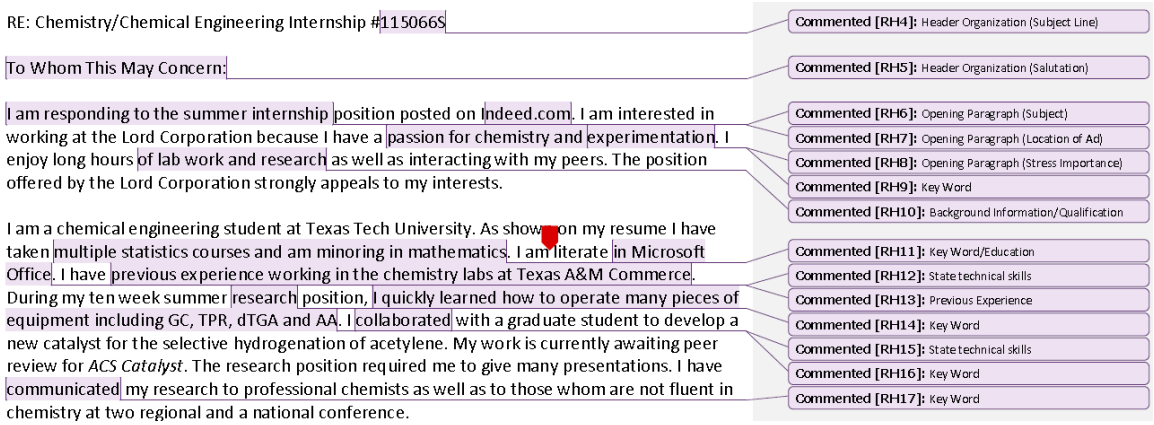
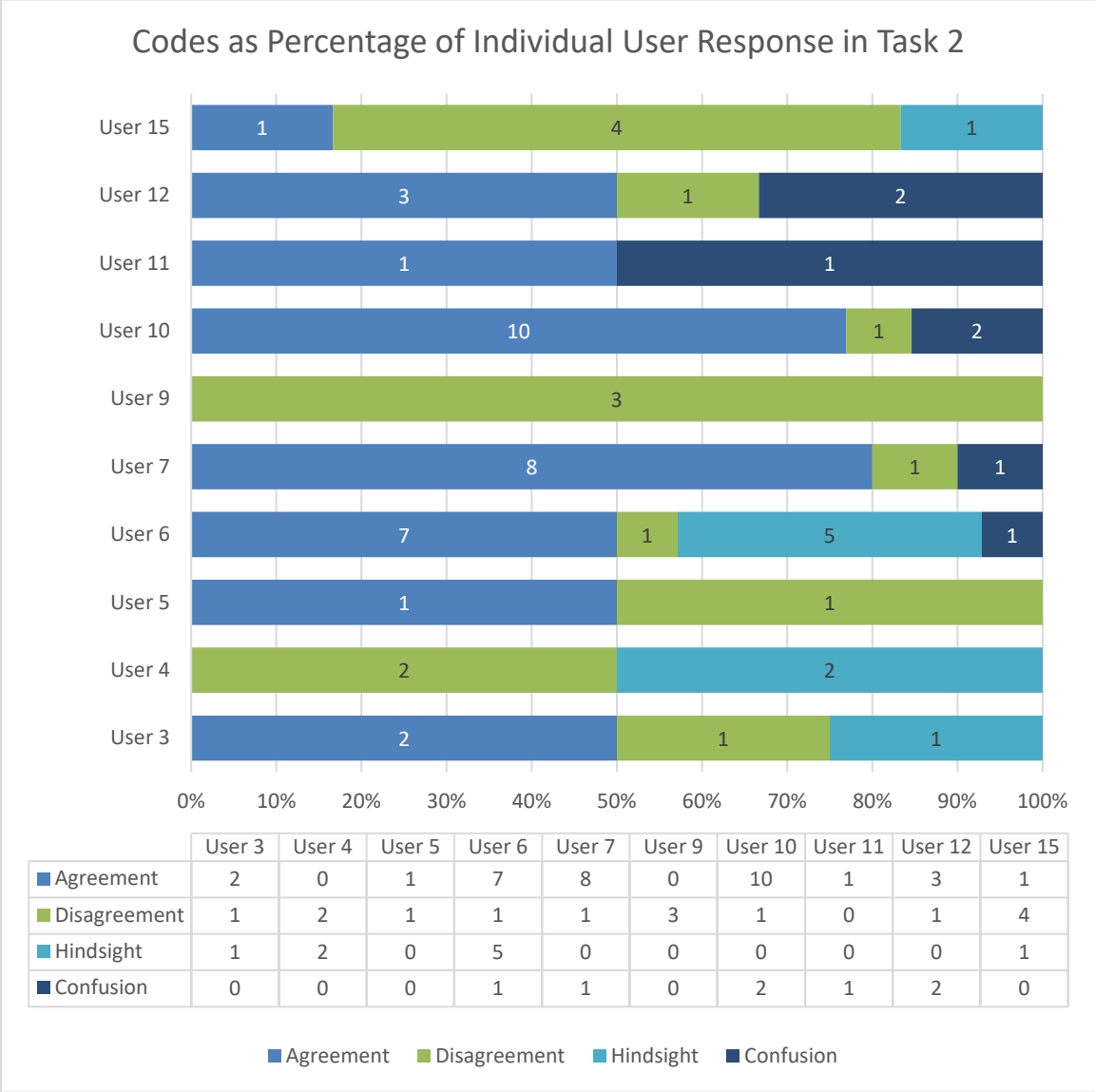


Figure 35: Example of Submission Requirement for Instructor 4's Students

The ten remaining participants made a total of 64 statements concerning the commentary during Task 2. Over half of those statements (33) indicated agreement with the instructor, but given that certain users made multiple statements, this calculation may lead to the assumption that participants agreed overall with the instructor comments. The majority (70%, or seven of the ten) expressed agreement with at least half of the comments received. Three users (30%) made proportionally higher statements of disagreement than agreement. Half of all participants made at least one statement expressing confusion as to what the instructor meant, and 40% made at least one "Hindsight" statement, meaning that they had noticed the issue after submitting the assignment and before viewing the commented-upon submission. Figure 36 helps to illustrate individual users' talk-aloud statements in proportion to their overall

response to their instructor's comments.



	User 3	User 4	User 5	User 6	User 7	User 9	User 10	User 11	User 12	User 15
Agreement	2	0	1	7	8	0	10	1	3	1
Disagreement	1	2	1	1	1	3	1	0	1	4
Hindsight	1	2	0	5	0	0	0	0	0	1
Confusion	0	0	0	1	1	0	2	1	2	0

Figure 36: Codes as Percentage of Individual User Response in Task 2

Users 7 and 10 had the highest percentage of agreement statements overall, with User 7 making eight statements and User 10 making ten. User 10 often nodded while reviewing the comments, and, unlike many participants, was more verbally expressive in talking aloud. Figure 37 provides selected examples of Instructor 1's comments and User 10's statements of agreement with those comments.

Instructor Comment	User 10 Response
“Put the specific number of years you've worked with these organizations.”	“adding specific years helps with credibility”
“I think this is a good point to make, but let's make it about the employer rather than you.”	“have to say how they will benefit... so makes sense to me”
“I'm not sure I understand the word ‘manually’ in this context. Did you do the work manually?”	“I agree. The phrasing is unclear.”

Figure 37: Side-by-Side Illustration of Selected Instructor Comments to User 10’s TAP Statements of Agreement

In comparison, User 9 solely expressed disagreement. Her instructor had made a total of 23 notations and statements in the submission; talking aloud, she mostly repeated her instructor’s comments, except on three points (Figure 38):

Instructor Comment	User 9 Response
“Perhaps you can break up your last paragraph and provide more evidence.”	“I don't like to gloat for myself, even when trying to get a job.”
“I think we need to work on design to make the resume more readable.”	“Doesn't really matter, because design’s not necessary to the job.”
“Also, make sure each item you have on the resume is important to the position you are applying for.”	“[Instructor 1]'s saying a lot of stuff I have in my thing isn't relevant to my job, but it is.”

Figure 38: Side-By-Side Illustration of Selected Instructor Comments to User 9’s TAP Statements of Disagreement

Confusion statements typically arose from instructor comments that were either corrections or one-word observations without explanation. For example, User 6 had a bullet point reading “Received education of how to work treatments and rehabs” in his resume; Instructor 1 placed a point comment over the incorrect preposition “of” and commented “on.” In reviewing the comment, User 6 stated “there's one that just says ‘on’ and I’m not too sure what that means.” User 12’s resume had an additional line break between two bullet points; Instructor 1’s comment was “spacing.” User 12 did not notice the additional line, stating, “Spacing... I don't know what [Instructor 1] wants for the spacing.”

For one user, it wasn’t the comments, but lack thereof, that created uneasiness. In reviewing Instructor 3’s feedback, User 15 became a bit unsure because of the lack of comments. At one point she noted, “there was no feedback here, so I guess that was okay,”

soon after repeating, “I don't see any feedback on this so I'm hoping that's okay. That's a little troubling.” The document User 15 referenced had been submitted as a text (.txt) file, which cannot be annotated in Blackboard as Word files or PDFs can be. However, there were no direct comments on this file in the rubric or “Feedback to Learner” section.

Given the statements expressing confusion or disagreement, the question arose of what participants would consider necessary actions to revise their work. The following task sought to answer that question.

Task 3: Composing a revision list.

Task 3 asked participants to construct a revision “to do” list for their assignment. Unlike the previous tasks, this exercise, at least as a written list, might not be a normal part of the student’s workflow. The scenario was phrased as follows:

> Assuming you are planning to revise your assignment, what do you think you need to do? Using MS Word, write up your plan for revision. You can refer to the feedback as often as you like. Please talk aloud about what you are doing as you go through each step.

Users were told that they did not need to write complete sentences for their list; key words and phrases would suffice. Users averaged five minutes 18 seconds for this task (Figure 39).

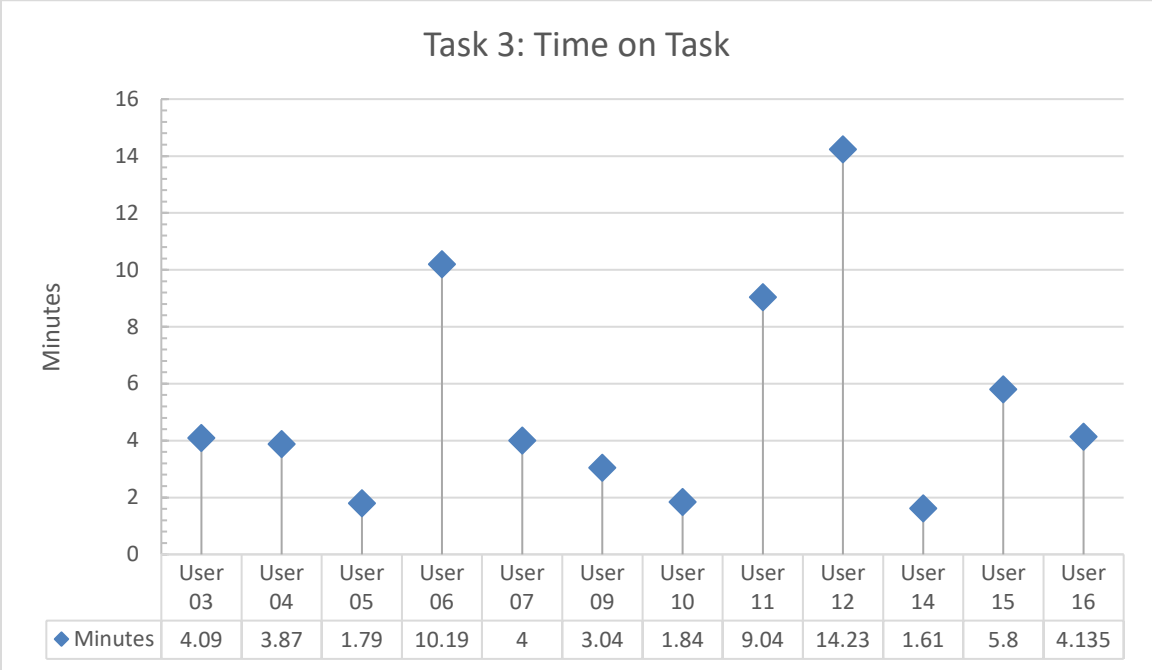


Figure 39: Task 3 Time on Task

Again, individual times varied widely, but generally the time spent composing the revision list aligned with the number of overall notation types. Participants, with two exceptions, composed their lists sequentially corresponding to the placement of instructor comments in the submission, referring back to the graded deliverable an average of six times.

Only two users did not return to their instructor's commentary: Users 10 and 14. User 14 had only two comments on his submission: a style suggestion for the cover letter ("also [for better sentence transition]") and a design note in the resume comprehensive statement ("I think adding some bullets here might make each of these points stand out better. But, overall content looks good"). User 10, a non-native speaker of English, had a total of 25 notations on his submission, encompassing 68 notation types. Sixteen of the notations, however, were direct

grammar edits, and four of the comments addressed conventions of grammar and style. User 10's revision list was thematic, rather than discrete tasks:

1. I am going to take care of the grammar in my sentences
2. I am going to organize the resume in a more chronological order.
3. I am going to read it loud to myself that way I will make sure the sentence are still good after the revision

By far, User 10 had the highest number of grammar-related comments and notations on his submission; nearly 30% of his instructor's comments addressed these concerns. Rather than noting each error in his "to do" list, however, he opted for a general statement. Interestingly, he was the only user to add a final post-revision check (reading aloud) to his list. Typically, participants' lists were discrete tasks, as User 15's list demonstrates:

Checklist for Resume Revisions:

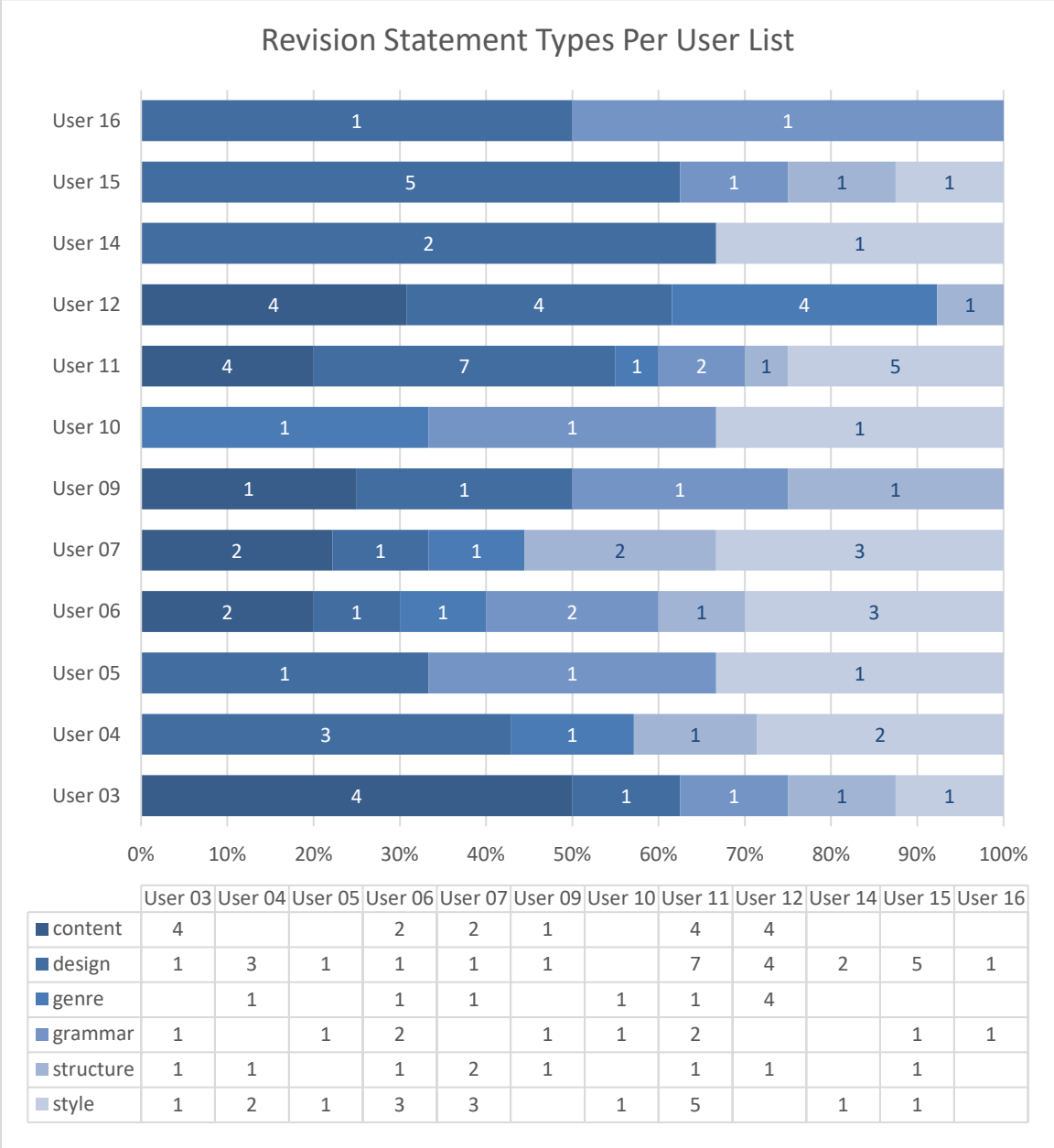
- Refer to Feedback
- Fix Name
- Possibly use a different font for my resume
- Add page #'s
- Fix Dollar Signs

Checklist for Cover Letter:

- Spacing- 1.5
- Font
- Change Intro Paragraph
- Try and break up 1st paragraph

Although users did work sequentially, they did not list each instructor's comment or notation on their revision list. While User 10's paring down of his list is an example to the

extreme, most users did this in one form or another. In total, users noted 92 “things to do” on their lists, in comparison to the 259 instructor notations. User 11 composed the longest list, with 22 items (Instructor 1 made 24 notations), and User 16 the shortest, with two items (the same number of statements Instructor 4 made) (see Figure 40).



	User 03	User 04	User 05	User 06	User 07	User 09	User 10	User 11	User 12	User 14	User 15	User 16
content	4			2	2	1		4	4			
design	1	3	1	1	1	1		7	4	2	5	1
genre		1		1	1		1	1	4			
grammar	1		1	2		1	1	2			1	1
structure	1	1		1	2	1		1	1		1	
style	1	2	1	3	3		1	5		1	1	

Figure 40: Revision Statement Types Per User List

User 16 had some issues using Blackboard on a PC, explaining, “this is laid out different than on my Mac.” He downloaded the original submission as a PDF, though he stated that he wanted to review his instructor’s comments (to view the comments, he would have needed to select the “download annotated PDF” option). He tried again, this time downloading the annotated PDF, and opened that PDF in the browser (Chrome). He could see where the comments were made due to the yellow icons, but was not able to read them. He would click on the yellow edge of the comment, but the text was not completely visible.

One unexpected observation is that two users listed items that were not based on instructor comments. Although Instructor 1 did not suggest that any of the information in User 7’s assignment was irrelevant, she noted, “Take out unnecessary information in job experience.” User 12 included on her list, “Add in honor society I just joined.”

Given that I had expected users to work sequentially in compiling their list, I had questioned whether students could prioritize between higher- (issues concerning content and structure) and lower- (grammar and punctuation) order concerns as a way of determining the effectiveness of feedback. Anecdotally, I and other instructors have offered opportunities for revision, which we may perceive as a true re-envisioning, but what we received were edits correcting surface errors. Task 4 asked participants, therefore, to answer the question, “What’s most important?”

Task 4: Prioritizing the revision list.

For the final task, participants were asked to rank the items on their revision lists from most to least important. The task was phrased as follows:

> Looking at the plan you've just created, what do you think is most important and should be done first? Second? Set up your plan in order of importance; please talk aloud about what you are doing as you go through each step.

This task was not, perhaps, typical of a student's normal workflow, at least not as a discrete task. Approaching revision, students may mentally, perhaps subconsciously, evaluate the "return on investment" for their efforts. In other words, what would require the least amount of time and energy to raise the assignment grade to the desired letter? Although structural and in-depth revision might lead to a significantly stronger and more effective document, editing takes much less time, and fixing grammatical errors is a relatively quick way to add a few points to one's grade. Therefore, this task was designed to learn what participants considered important to revising their job application materials without having to engage in the revision process.

With the exception of Task 1, which asked participants to access their assignment in Blackboard, Task 4 took the least amount of time to complete. On average, users spent three minutes prioritizing their lists, with Users 6 and 11 taking the most time (approximately 6.5

minutes) and Users 14 and 16 the least (at about 0.5 minutes) (see Figure 41).

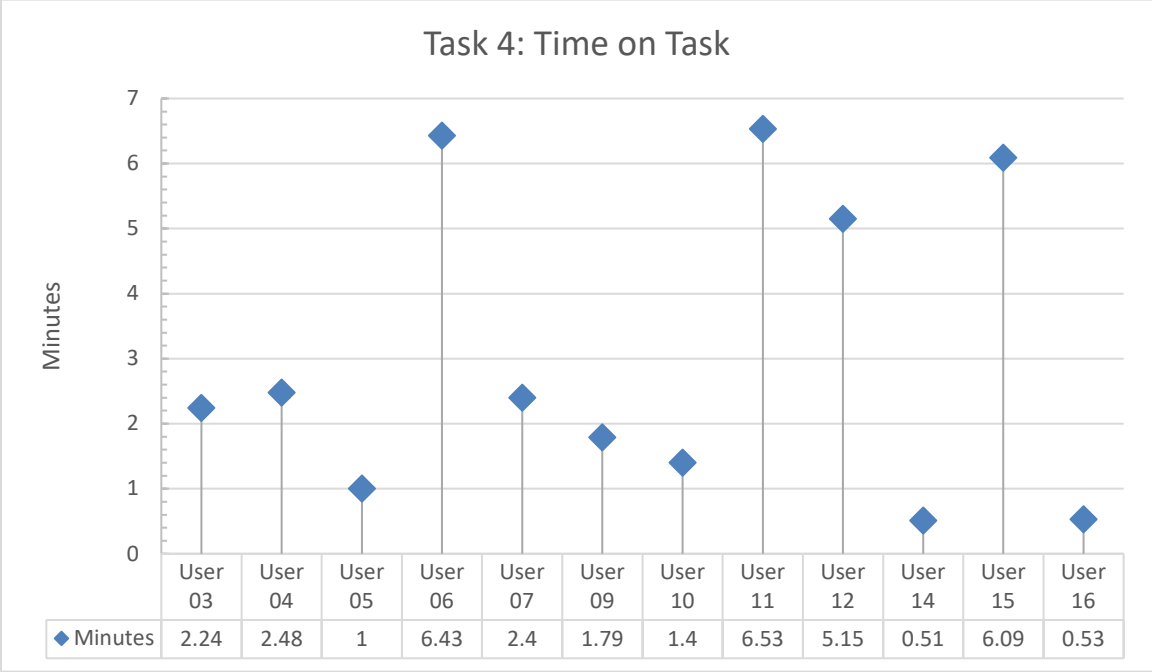
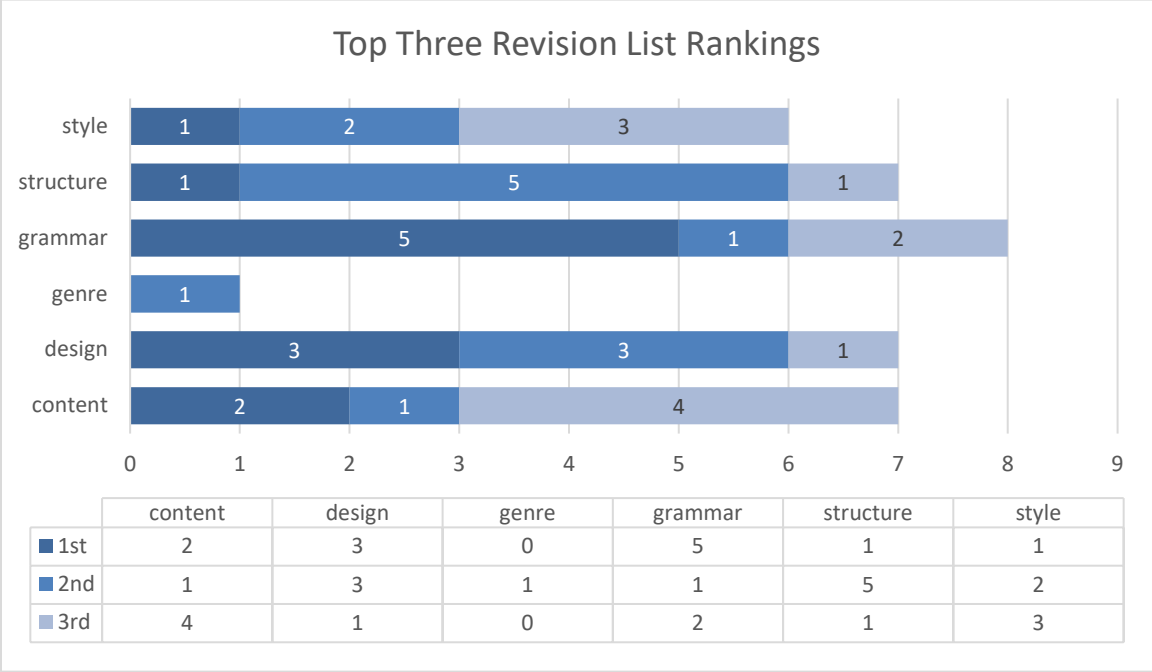


Figure 41: Task 4 Time on Task

Participants did not necessarily prioritize higher-order concerns over lower-order concerns. For five of the users, the first list item was a grammar issue, which is considered a lower-order concern or surface error. Three prioritized design, two content (considered higher-order), one style, and one structure (again, higher-order). While design, structure, and content were all strongly represented as one of the top three revision list items, grammar was still

higher ranked overall (see Figure 42).



	content	design	genre	grammar	structure	style
1st	2	3	0	5	1	1
2nd	1	3	1	1	5	2
3rd	4	1	0	2	1	3

Figure 42: Top Three Revision List Rankings

However, the rationales for the rankings demonstrated the participants' considerations of audience and purpose. User 5's first revision priority was to "fix punctuation errors" because, in his belief, the punctuation errors made his job application appear "unprofessional." User 7 deemed "create clear and concise claims for all paragraphs" most important. In this case, she stated that revising the paragraphs was of greatest concern, "because that was, I think, the biggest issue [Instructor 1] had." However, User 7 wasn't solely focused on pleasing the instructor; she noted, "The job letter is the first thing they [employers] see, so that makes the good impression." The writer also referenced classroom instruction in providing her rationale, explaining that her instructor "mentioned in class that the resume doesn't get time" (meaning as close attention).

Design also ranked highly for users in revision. This may be rooted in design constituting the highest percentage of instructor comments. User 9 noted that the instructor mentioned

design frequently in the comments, and her first list item was “Design, more unique.” Her reason? “Design can make it stand out or be like everyone else’s.”

Post-Test Survey on Perceptions of Feedback.

After finishing the representative tasks, participants completed a brief post-test survey. This survey was only completed by the twelve participants who were able to access their feedback and therefore had moved on to the second task. The survey queried their overall perceptions of the feedback they had just reviewed and applied, and were the post-test questions asked by Still and Koerber (2010).

In general, participants rated their experience highly. All rated their instructor’s comments as very useful (*n*=8; 66.6%) or useful (*n*=4; 33.3%), ranking the majority of comments received as very useful (*n*=6, 50%) or useful (*n*=6, 50%). Participants believed that the instructor comments' location (where they were placed) was very usable (*n*=2; 16.6%) or usable (*n*=10; 83.3%). Overall, participants found the instructor comments either very satisfying (*n*=3); satisfying (*n*=9).

There were individual outliers concerning the perceptions of instructor tone and number of instructor comments. While most considered the overall tone of instructor comments as very positive (*n*=4) or positive (*n*=11), User 15 considered the overall tone to be negative, and the coding of her submission aligns with that. Out of twenty notation types, six were negative, five were positive, and nine were neutral. Similarly, all but one user rated the amount of instructor commenting as very adequate (*n*=7) or adequate (*n*=4). User 16, who had two comments on his submission, and during testing had downloaded files to see if there were additional comments, was the only one to rank the amount of commenting as “not very adequate.”

Given the technical issues that some users had in reviewing feedback, it is not surprising that participants were a bit more divided in evaluating the time required to review the comments to make a revision plan. Although the majority ranked it as short (*n*=6) or very short (*n*=3), 25% of users deemed it time intensive (*n*=3).

For the most part, participants believed that the instructor comments would be helpful in the next assignments, with 42% believing it would "greatly" help (*n*=5) and 33% believing it would help (*n*=4). One quarter of the participants, however, believed the comments would have no impact on the next assignment (*n*=3).

Post-test interview.

The final part of the test session was a post-test interview in which users were asked to respond to a series of questions concerning their perceptions of instructor feedback. These post-test questions were those used by Still and Koerber (2010) in their usability study of instructor commentary. Because two of the questions specifically addressed the feedback the participants received, those who did not have access to their evaluated assignments were not asked these questions.

What makes instructor comments useful or usable?

For the first question, "What makes instructor comments useful or usable," over half of the respondents (62.5%, *n*=10) stated that specificity and detail were key. User 5 stated it thus:

> For me, it's when they give specific details and when they say exactly what they want. I don't like having the broad statements of "we want." I mean, I want the details saying exactly like, "we want three paragraphs,' or "we want it this long," "we want you to say this," or "we want you to relate it to this." I don't want "oh

> we want a good length," or "we want it to look good." I mean, I don't know. I mean I like it when they're specific and I can follow a perfect structured plan.

As User 15 explained,

> Oh, I really like for them to be very specific about what they want from me in terms of like revisions and feedback. I mean. I feel like if they can convey it in, you know, two sentences, and hey, like kudos to you for being concise, but if it's very detailed about like, "oh, like this sentence right here is an example of, like, blah blah blah blah blah," I work really, really well with that.

The importance of the tone (either real or perceived) of the instructor's comments was noted by two respondents. As User 1 stated, "I like it when they tell me what I did wrong, but in a nice way." User 9 expanded upon that preference, explaining how tone affects her motivation:

> Like the tone of the text kind of makes you either really just satisfied or kind of intimidated. Like "oh I didn't really do that well," or "they seemed upset doing this. They think I did a really bad job" could really affect how somebody, or how I would, at least, take the feedback. And you either use it or just disregard it.

Seven participants addressed the medium of delivery as a useful or usable component of instructor comments. For three of the users, annotated text such as that used in Blackboard was preferred because they felt it provided specific indication of changes to be made. Four participants stated that they preferred instructor conferences. Conferences were preferred for a variety of reasons, ranging from communication styles ("I'm just a person who likes to interact in person"—User 9) to being able to ask follow-up questions.

What specifically did this instructor do that made the comments useful or usable?

The twelve participants who were able to access their instructor's commentary were then asked, "What specifically did this instructor do that made the comments useful or usable?" The vast majority of respondents (75%, *n*=9) cited their instructor's specificity and detail. In explaining what they meant, users referenced instructors' explicit directives, modeling, and pointing to resources. User 3 explained why she believed explicit directives were important:

> [Instructor 1] read through everything, and she wants me to sound like the best that I can be, and so when [Instructor 1] says "Merge two body paragraphs and add some support because they're kind of lack— they're lacking, whereas your first body paragraph is awesome," and so it just kind of brings attention to me that I need to talk a little bit more about the other two things.

User 4 noted that for her, specificity and detail were complemented by an instructor providing a model for rephrasing:

> [Instructor 1] was really descriptive in what could have been done better, and [Instructor 1] also put things— like there was a sentence part that [Instructor 1] said to change to make better, and [Instructor 1] actually put an idea of how I could change it, like [Instructor 1] put in example of what I could have put specifically there that would have been a little bit better.

Like User 4, User 5 appreciated that his instructor did more than mark errors, but offered suggestions for improvement. His instructor did not correct his error, but noted where he could look it up in the textbook and figure out how to correct it:

> What I liked was [Instructor 1] …has the thing where [Instructor 1] told me my sentence was too long and had it highlighted, and beneath that, [Instructor 1]

> had put in, “missed a comma here,” and it's in this chapter, on this page, you can find how to fix this issue for the next assignment. [Instructor 1] told me here's how to make it better for the next time that I was working.

Two of the respondents cited brevity. User 14 liked that Instructor 4’s comments were, as he stated, “very short. They were simple suggestions, and they were easy to do on the document.” User 7 appreciated that Instructor 1 “wasn’t wordy,” explaining “when I see a lot of comments, I’m just like ‘I really don’t want to read all those, so whatever.’”

Tone was again a consideration. User 3 explained how positivity and encouragement factored in to the usefulness and usability of the commentary she received:

> I liked how [Instructor 1] pointed out good things as well as things that could be worked on because it shows that ,well it makes it makes me more like—what's the word that I'm looking for—because usually it’s if instructors are, I don't want to use the term "rude," but if they're…if it's more criticism, then I kind of stop listening and stop reading, and so it's good that [Instructor 1] put some good things in there also, because it made me feel good about the paper and makes me feel good about my writing.

User 15 was affected by the tone of her instructor’s comments, appreciating the directness, but perhaps not the bluntness, of Instructor 3’s statements on her submission. She also preferred longer, not shorter, comments:

> Um, I mean [Instructor 3] pointed out exactly what I needed to fix. It didn't convey like, the nicest tone, like probably not like "Bad start!" like that, but at least [Instructor 3]'s honest. Like, whatever. Ummm... let's see... The feelings aside, [Instructor 3]'s giving me constructive criticism for how to make my work

> better, and I appreciate that some of [Instructor 3]'s comments were lengthier than others, so that was nice.

What makes instructor comments not useful or unusable?

If specificity and detail were what made for usable and useful instructor commentary, it is logical that many participants felt that vagueness and lack of explanation made commentary not useful or unusable. Nine users expressed frustration with what they deemed vague comments or ones without explanation or guidance. As User 5 stated:

> I'd say when they're... when if they think you did a good job, then “you did a good job.” Or it wasn't good, and they just write “it wasn't very good.”' And they just write the one little note. Why was it good so I can keep doing good, or why was it bad so that I can improve so that it looks better?

User 11 echoed these sentiments with:

> Whenever they're just like "oh, this is bad." Okay, what do I do to fix it? That's not very helpful. Or like just "this needs to be changed." Okay, well, I wrote that, but I don't know why it needs to be changed or I would have wrote [*sic*] it in the first place, you know?

Participants often felt that holistic comments were too broad to be helpful; they preferred the feedback to be directly indicated in the area of the submission that the comment addressed. User 16 explained,

> I've had instructors give me feedback just at the very end of the document, like as a paragraph, and it's not very useful to me because I don't know specifically what they're referring to. It may be a very vague comment, like you know,

> "you've got unclear paragraphs" or something like that. I don't really know what specifically they're referring to.

Unsurprisingly, participants again considered the real or perceived tone of the instructor's comments as a factor in making feedback not useful or unusable. When asked the question, User 1 immediately said, "When I feel like I'm being criticized." User 9 stated, "if it's really like mean or upsetting then I don't think I would use their comments or feedback." For User 15, who had taken issue with the tone of the feedback she received, this question elicited a rather forceful response:

> Um, I don't think it's helpful for an instructor to be like. "this is like the worst piece of writing I've ever seen." I don't know, I think comments like that [are] really unnecessary. I feel like you could say, "hey, [*starts saying own name*]!" No, sorry. "Hey, kiddo! This wasn't your best work, but here is what we can do to fix it, and here's what we can do to get you back on the right track!" But I feel if you're going to demean me, or if you're gonna belittle me in some sort of way, like if you're going to say, like, "I don't even know why this is your major," or "you can't do a simple task," "you can't do dah dah dah..." I think that's stupid.

Technical jargon and editorial notation—though none of the respondents used those terms—were also cited as making comments not useful or unusable. Three users addressed what they termed "vocabulary," "complex wording," and "half of a word or an abbreviation of something." In each case, their explanations indicated that they were referring to specific technical terms. Such terms might concern style (such as "wdy" for wordiness), grammatical notation (such as "s-v agr" for subject-verb agreement), or editorial notation (such as "¶" for new paragraph). They found jargon and notation to be confusing and unclear.

What specifically did this instructor do that made the comments not useful or unusable?

When asked what specifically did their instructor do that made the comments not useful or unusable, the majority of respondents (75%, *n*=8) directly stated that they believed that their instructor's comments *were* useful and usable. However, some comments that followed indicated that there were unusable or not useful aspects of the feedback that participants did not necessarily consider the "fault" of the instructor.

Two respondents (User 5 and User 16) made direct statements that they did not find their instructor's praise to be useful or usable. For User 5, it was because he had met with the instructor to work on the section in question before submitting the assignment. As he explained, "We already talked about it. I mean I get that you're telling me again but I kind of already knew, so I didn't need the reaffirmation." User 16 took issue with his instructor's comprehensive ("good job!") statements, believing that while they "make you feel better," they "don't help you to improve your document." The issue was less with praise than it was with lack of meaningful context: "if you're referring again specifically to an instance of where you maybe worded something really well…or did really good research on a certain section, but praising the entire document as a whole is not very useful."

Issues with the Blackboard interface were identified by two users as affecting the usefulness and usability of instructor comments. User 6 intimated that this was the instructor's doing: "The only thing was I guess I didn't know how this works, how [Instructor 1's] comments were set up." User 11 also had difficulty with Blackboard, but saw it less as a usability issue with instructor comments and more of an interface issue:

> I think [Instructor 1] did a pretty good job, really. I kind of had a hard time just because of the setup. I couldn't download it and that's what made me upset.

> Even on my laptop when I was trying to look at it, I couldn't figure out a way to download it, which I guess it says you can, but I couldn't figure out how to. So that kind of made me angry just because I couldn't keep the comments anywhere, but like other than that, I feel like [Instructor 1] did a very good job of doing it.

For one user, a combination of confusion and disagreement made her feel that one of her instructor's comments was not useful or usable. User 12 listed her high school in her resume, which Instructor 1 directed her to remove. But as User 12 explained, "It literally says in the job application, high school required, so I just figured. I mean I assume they think I went through high school to college, but I just kind of thought it was relevant." User 12 had reasons for listing high school, but she believed Instructor 1 did not understand her rationale for doing so.

Despite expressing a very strong emotional reaction to Instructor 3's comments, User 15 initially stated that she found all of the feedback to be usable. As she continued to speak, however, she appeared to question whether her instructor's perceived tone helped or hindered the usability of the comments:

> Well, okay. I feel slightly conflicted. So the "near-fatal"— the sentence was like "this is near fatal." Like my paper's dead? I know it's coming from a good place, but I feel like, you know, [Instructor 3] probably could have said that in a different way. Like "hey! Just so you know, this portion of your paper, that's not going to look good to the reader, because blah blah blah." "Near fatal" makes it sound like it's doomed, like it's dead already, like it's— oh gosh—awful. But, I don't know. It got [Instructor 3]'s point across.

Is there such a thing as too many comments?

Respondents' answers to the question of whether there were such a thing as too many comments can best be defined as "Yes. No. Maybe." Nine of the respondents said "yes," and seven said "no." In explaining their responses, however, one theme emerged, whether the user answered "yes" or "no": seeing many instructor comments on an assignment made participants nervous, uncomfortable, or overwhelmed. User 4 explained,

> I think there can be because sometimes they can get a person down and feel like they just really messed up. Kind of make them anxious for the next thing that they're going to do where they feel like they need to change a lot of stuff, and that they they're just doing bad.

This sentiment was echoed by users 1, 7, and 12, who all responded affirmatively to the question. Although User 16 did not believe that there could be too many comments, he maintained that "you might reach a point where if you give your paper to students it might be a little intimidating that your paper's all marked up." As a non-native speaker of English, User 13 felt that he benefitted from every comment an instructor made, but still, many comments had a psychological impact:

> That's like kind of like if you see a lot of red marks in your papers, yeah, I get worried, but it helps me to... Yeah. *I* get worried, because there are red marks everywhere. And I remember the first project I did in Comp I. It had a lot of—I didn't go to writing center or anything, and then that was my first semester over here, and we don't have too much experience of writing projects like that, assignments like that stuff, because we never did that in my country. And then I was worried because I didn't go to writing center, I didn't consult my, you know,

> professor. And then it was like some 65 or 70 points, but it had like a lot of red marks everywhere. You can say like every sentence. And I was worried, because, you know, my whole paper was colorful with everything like that. So yeah, it makes me worry, but, you know, that helps for the betterment of me, and then for the paper and everything.

Respondents maintained that as long as individual comments were relevant and justified, they were not excessive. Although User 5 answered "yes," he did so with the caveat, "I think if you're detailed and oriented about what you say and how you say it, that most of time if you give productive comments, then you can't have too many, as long as they're healthy." User 6 also answered "yes," but followed up with, "As long as everything that [the instructor] comments [on] is constructive criticism and how I can fix my assignment, then [the instructor] put however many comments [the instructor] wants to." What made comments seem "too many" was often content instead of number. If the comments addressed what users considered to be pet peeves (such as font preference), were repetitive (such as noting the same type of error multiple times in a document), or were compliments without justification ("good"), users considered this excessive. User 9, who answered "no," explained if there were a lot of comment "noise," "I wouldn't know which one was the most important or if they're just kind of trying to input their comments in every little thing."

What's the ideal number of comments? Users 7, 9 and 14 volunteered their opinions on this. Each estimated approximately 5-10 comments per page.

What is the best way for an instructor to comment on your writing?

When respondents were asked what the best way was for an instructor to comment on their writing, most could not limit themselves to just one "thing," and provided multiple

strategies that they believed worked best for them. Participants typically addressed medium and tone rather than structure or content.

Most spoke in terms of the medium of delivery. Four (users 1, 9, 12, and 16) stated that they liked handwritten notations—as User 1 called it, "the old-fashioned circle." Three explained their rationale. User 1 liked the visual tie-in to having sections needing attention circled. User 9 confessed that she "didn't really like computer stuff" and found viewing on a computer screen distracting; but if it was on "a sheet of paper, the different colors right there," she could focus better. User 12 simply said, "I like to be able to touch things and flip through things rather than scroll and stuff." Three users preferred embedded comments through Word, Blackboard, and Acrobat, because comments were directly connected to the text and the instructor's penmanship was not a barrier to comprehension.

Seven participants (3, 6, 8, 9, 12, 13, and 16) indicated that face-to-face conferences were one of the best ways, if not the best way, for an instructor to comment on their writing. They liked the opportunity to clarify and ask follow-up questions, and for users 8 and 13, having the document in-hand while the instructor provided explanation increased memorability.

Some respondents expressed an interest in, or at least a curiosity about, video or audio feedback. User 11 said "I think video would be cool because you could literally hear the teacher's thoughts…you know, just seeing where they're pointing to or what they're thinking about? Yeah, that would be interesting." Besides the "cool" factor, users believed that video would enhance their learning because the medium provided visuals, voice, and movement to illustrate, as well as to aid in interpreting the tone of, the instructor comments.

The importance of tone was specifically addressed by six users (3, 4, 7, 12, 14, and 15). For User 12, tone was tied to emphasis and comprehension:

> I think the tone is actually, kinda, I like that. If you're talking... like text it's sometimes harder to read people, And, I don't know, face-to-face, you can tell oh, well that was a real problem area, normally by how they said, "well, you should *really* focus on this" rather than online, it's like they just wrote a lot more about it.

For other users, however, tone affected motivation and self-esteem. User 14 stated he preferred positive or neutral comments; negative comments—which he defined by explaining, "I've got one professor who will give verbal feedback and teaches the entire class like we're stupid"—impacted his reception and potential application of the comments. User 4 distinguished between constructive criticism and what she saw as destructive criticism:

> I personally like when they are more positive and helpful rather than where it feels like they're…not getting down on you, but being overly critical. Where it doesn't feel like they're helping, it's more like they're just criticizing you. So, I feel like I like it better when their tone seems more helpful than "great God what are you doing?"

User 7 acknowledged that there needs to be "a fine balance" between positive and negative statements. For those who spoke to negativity, the issue was not in an instructor pointing out error, but in whether the instructor's comment came across as attacking. User 15, who had an emotional reaction to Instructor 3's statements like "just looking at this I don't want to read it" (concerning design), was asked if she might have perceived the comment differently if it had happened, for example, in class:

> Oh, you know, probably. And especially if [Instructor 3]'s laughing along with me, or if classmates on the side. If we're talking about an example on the

> screen, like "this right here is a near-fatal blow, guys. Don't do this." And I think, also, if [Instructor 3]'s able to explain it. I mean, [Instructor 3] wants us to do well, and [Instructor] wants us to succeed, so I know that it's coming from a good place, but just sometimes seeing it just straight on the pages, like, "Owwwwwch. Okay."

Like User 12, User 15 recognized that tone, inflection, and intonation were interpreted differently, perhaps even more clearly, when the words were spoken rather than written.

The findings from user testing in some ways contrasted to those of the 2311 Student Survey. These 16 participants perceived face-to-face conferencing to be most effective for instructor response, ranking handwritten and embedded digital text second and third, respectively. Observation uncovered unanticipated issues with the usability of the learning management system, Blackboard. In observing students' engagement with instructor feedback, it was apparent that students in a sense engaged in a dialogue with their instructor's comments; whether they agreed, disagreed, or were neutral as to the feedback, they typically gave each point consideration (and at times, expressed confusion and frustration). Generally, students were more receptive to feedback that was framed positively and expressed succinctly yet precisely. As far as process, it became apparent that while students may work sequentially through comments and even in initial revision plans, they did perceive the value of some revision strategies to be greater than others. When prioritizing their revision plans, they often gave greater importance to grammar and design because in these writers' opinions, error or lack of usability would negatively affect their audience's perceptions of them as applicants.

Summative Analysis of Findings

The data collected from instructor and student surveys as well as from user testing and post-test interviews provided answers to each of my initial research questions.

How are instructors currently providing feedback to students (what media, content, and style)?

The majority of instructors (national and English 2311) who participated in the study reported they are using digital written commentary or handwritten comments for student feedback. Few use audio, video, or other methods at all, and when they do, it is sometimes or rarely.

From the instructor-evaluated submissions collected as part of this study, English 2311 instructors noted design issues most frequently,[10] though higher- and lower-order concerns are typically addressed equally. Instructor comments ranged from one-word corrections to brief explanations. Individual styles varied as far as tone, with generally neutral or positive comments.

What experiences with and expectations for feedback do students have?

Students who participated in the survey and in user testing have mostly received handwritten feedback, with some experience with digital embedded text and conferencing. They have little to no experience with audio or video response. This population prefers handwritten comments to all other media, though they consider digital embedded text and instructor conferencing to be nearly as effective.

[10] This may be due to perceived audience reading strategies; many job application readers tend to scan and skim.

How do students typically interact with feedback?

The study revealed that Blackboard's Review Submission History screen was not a familiar interface for participants, so it is difficult to ascertain whether the access to and subsequent interaction with feedback was "typical." As would be expected, test participants moved sequentially through their instructor's comments. Many considered the individual comments to be a "to do list" for correction, but in prioritizing their to do lists, they tended to make choices based on their analysis of audience needs and expectations.

Test participants found the (often perceived) instructor's tone to be a major factor in how they received the feedback. Comments that were interpreted as attacking or negative elicited defensive, even resistant, responses from students.

How might the medium of the feedback impact its usability (how effective, efficient, engaging, error tolerant, and easy to learn it is for students), and why?

The findings from this study indicate that Blackboard—the medium used by English 2311 instructors—impacted the usability of feedback for test participants. Difficulty with access and navigation affected efficiency, effectiveness, and even engagement.

The following chapter analyzes the findings to further unravel the trends and themes noted above, and from that, suggest possible feedback practices to enhance students' learning experiences.

Chapter V

Analysis and Discussion

When I initially began this study, my intent was to determine if the medium with which instructor commentary was provided affected students' reception, comprehension, and application of that commentary. I had thought that this analysis of commentary media would be based on a comparison of embedded text commentary to screencast or veedback. That, of course, is not the way this study evolved. That does not mean that this project was a failure; my questions—and the specific overarching question concerning media—were answered in a way I had not anticipated. I cannot claim to have made any definitive determination, but the research did lead to unexpected findings. Yes, the medium impacts the message.

This purpose of this chapter is to analyze the relevance of my findings and consider the application of this analysis to both classroom practice and further research. The first section specifically analyzes the findings in terms of the research questions. Following that is discussion of takeaways and better practices for providing instructor commentary. The final sections address some general lessons learned as far as hindsight and hacks and concludes with the limitations of this study and considerations for future research.

Responding to Research Questions: An Analysis

In a marked change from Lunsford and Lunsford's 2008 study and Still and Koerber's 2010 study, embedded digital text has become the norm for responding to student writing—at least at the college level. Given the widespread institutional adaptation of learning management systems (LMSs) such as Blackboard and Canvas, this change was expected, yet it still marks a dramatic shift. The majority of LMSs feature inline grading that is seemingly seamless within the

application. They also facilitate a paperless classroom (and in some situations, take the place of a physical classroom) in which most, if not all of the work of the class is submitted online. The positives of this type of environment include tracking and early intervention for at-risk students, anonymized grading, and up-to-the-minute grade information for students, in addition to potential savings in printing costs for both students and instructors. The down side is that grading and evaluation can begin to be perceived as more legal/client-based rather than an educational process. The English 2311 program at Texas Tech mandates that all course management, from assignment submission to grade tracking and even class email communication, be administered through the Blackboard interface. One of the main reasons for this is to maintain a record of communication in case of student grade disputes. This drive to document has its effect on the way feedback is provided and interpreted. More than one instructor has questioned if comments are only read when the student believes that they were graded unfairly or incorrectly. As a national instructor survey participant explained,

> I have discovered through my own research that most students do not pay attention to commentary on their essays unless they disagree with the grade they received on the essay. For example, if students thought they would be getting a "B" on an essay and got a "C" instead, the students would then read the commentary.

The underlying claim in this quote is one that has been echoed by other instructors: commentary is as much a justification for the grade—perhaps even more so now with the immediate grade availability—as it is feeding forward to improving communication skills. Employing commentary to this end may serve to promote the assertion that writing can be evaluated objectively, but this stance can be counterproductive to improving student writing. Instructor 4's strategy of having students use MS Word comments to note where criteria where

met (see Figure 35) acts to justify the grade and even supports the assumption that writing can be objectively evaluated. While Instructor 4's criteria may be good generic practices for job application materials, as discrete criteria they may, essentially, penalize different yet equally effective composing strategies. This can promote student beliefs as well that writing is "right" or "wrong," terms many of the study participants used in reference to their work. User 10, a non-native English speaker, assumes that there can be measurably "perfect" writing:

> Like the English I and II. I had grades, some like 80 out of 100. So this means that I still have problems. And there is still a gap that I can improve on. But my instructor, she used to tell me that in each paragraph, she used to say, "good," "good work," "good work," "good work." So if everything is good, why didn't I have the grade like 100/100 and not a perfect grade?

The drive for grade justification, supported by the veneer of quantifiability, may run counter to the goals of most writing courses. While grammar, punctuation, and citation format can be easily marked as "right" or "wrong," these factors generally have less of an effect on how well a deliverable fulfills the author's goals. Content, organization, design, tone, and style choices are neither intrinsically "right" nor "wrong"; they are, instead, strategies that can be employed with degrees of effectiveness, and that effectiveness determines if the writing—and ultimately, the writer—succeeds in achieving the purpose. This is part of what makes the application of instructor commentary—and writing as a whole—a complex process. Teaching students the analytical process that promotes more effective writing choices requires a perhaps uncomfortable revelation: the evaluation of writing is to some degree subjective.

In addition, the feedback options for LMSs are limited, whether or not grade justification is a concern. Both a feature and a drawback of most LMSs is the ability to comment upon student submissions using the grading interface. Commenting, striking out, highlighting, and

limited drawing options do offer different methods for instructors to respond, but these features have limits and do not encourage providing feedback in other ways, such as audio, video, or conferencing. With Blackboard, uploading a separate file with a submission (such as audio or video) is a multi-step process leading to a non-descript hyperlink in the "Feedback to Learners" box. When clicked on, media files open in other programs (which the learner may or may not have installed). While an online video service with a viewer (such as YouTube) could be an option, legal considerations as to privacy (notably, FERPA regulations) complicate this, even if the video settings are unlisted or private. The additional work for instructors to not only create but also make available multimodal modes of feedback is, in my estimation, a major reason why the practice is not more widespread, and therefore, why few students have experience with these modes. Conferencing, a mode that many students find most effective, presents a problem both with logistics and, potentially, documentation, especially in an environment where the "paper trail" is maintained through the LMS.

As the LMS becomes ubiquitous, does this mean that the days of "red ink" are gone? At this point, I would argue that handwritten commentary is still alive and well, especially in primary and secondary education, and it will continue to be for quite some time due to technology access. Computers cost money, money that not all students (or school systems) have. Teachers in these schools need to provide feedback in ways that will be accessible to all students. It is not until college that a student can be not only expected, but required, to have regular access to a computer as part of their educational process. Even when that occurs, it does not mean that students will regularly use a LMS in any of their college classes, and it is less likely that they will receive any type of formal instruction as to how to navigate and use the LMS to fulfill the course requirements. As it stands, while all of the study participants had experience with Blackboard, not all had experience with digital feedback, and few were able to navigate the

interface—specifically the "Review Submission" screen—without difficulty. Given its familiarity and ease, it makes sense that "old school" handwritten comments were preferred to digital by several participants.

Beyond the medium of commentary, the instructor-evaluated submissions collected as part of this study show that the content of feedback generally noted higher- and lower-order concerns equally. Design, however, took precedence categorically. This may be because the assignment genre (job application materials) is one in which design is crucial to audience access and usability. Instructor feedback in this area rarely noted aesthetics; instead, instructors focused on information design strategies including header differentiation and subordination of information using subheadings, indents, and bullets. Within the scope of this assignment, design can be considered a higher-order concern, as it is key to document navigation and findability as well as its role in creating document structure—which is crucial given the time and resource constraints of many real-life readers of such deliverables. Student talk-aloud statements (with the exception of User 9's) indicated that they recognized the importance of design given the assignment genre and its practical applications. While the participants' initial revision lists repeated instructor comments sequentially, in prioritizing, they tended to rank items according to their analysis of audience impact. Although one participant made a statement concerning doing what the instructor wanted, many explained their choices in terms of ethos and logic. For example, though grammar may be considered a lower-order concern, more than one user prioritized grammar edits because, in their opinion, such errors would harm their credibility. Aesthetics—again, a potentially lower-order concern—was prioritized by one user so that her resume would be visually more distinctive to an audience that probably sees the same few MS Office templates used for hundreds of individual job applications.

These findings again affirm how complexity and what Albers (2011b) terms "contextual awareness" must be taken into consideration in evaluating the usability (and UX) of instructor commentary. As a researcher who has taught writing for nearly two decades, my initial assumptions, as per my training, were to deem higher-order revisions more "worthy" than revisions that simply fixed surface errors. In understanding students' rationales for their proposed changes, I recognize that their choices are based on an analytical evaluation of context—and should the context change, their choices might as well. Had the assignment, in other words, not been a job application where judgment is swift and merciless, these writers might not have prioritized grammar and spelling fixes.

Style and tone of instructor comments were crucial to student reception, comprehension, and potential application of feedback. One-word comments or corrections at times led to confusion. As reported in the preceding chapter, User 6 didn't know, for example, that Instructor 1's comment "on" was to correct a preposition error; User 12 puzzled over the statement, "spacing," before realizing that Instructor 1 was noting inconsistency with line spacing in the document. Specific and detailed feedback was not only more effective for students, it was more persuasive. Students valued praise and criticism more highly when instructor statements, while not lengthy, were precise. Providing the rationale—the "why" of the comment—gave students insight into rhetorical strategies and potentially convinced them to employ those strategies in their revision plans, beyond the impetus of mere grade improvement. These explanations were as important as providing a model for revision or directing the writer to resources such as the textbook.

However, the perceived tone of an instructor's comment, regardless of whether or not context was provided, affected its meaning and reception for students. As was seen with User 15's response to Instructor 3's perceived negative tone, if students felt that the communication

was disrespectful or that it disregarded their agency, they would either shut down or be more resistant to it. User 9's response is an example of this resistance; Instructor 1's suggestion to remove high school from her resume led her to question whether the instructor had read the attached job ad, which required a high school diploma. As User 9 continued reviewing the feedback, she increasingly made statements questioning the relevance of Instructor 1's comments to improving her job application.

Technically, the above feedback was highly usable, if the sole user goal is to earn a higher grade in revision. The students had commentary that provided adequate suggestions and directives to make changes that could result in grade improvement. If, as the case may be, that is a student's primary goal (as theorized in Still and Koerber's 2010 study), then embedded electronic comments are much more usable than handwritten comments are. Free from illegible handwriting and potentially misinterpreted lines, cross outs, and circles, digital text minimizes such ambiguities. If one were to assume a purely accommodationist approach (Howard 2017), then instructors need only focus on providing contextual responses (as opposed to one-word comments or using technical jargon) to "fix" the errors in commentary. The users in this study, however, made choices that would not necessarily significantly impact their grade. Instead, their decision-making process was often driven by their perception of impact on their prospective audiences. In addition, the users' statements as to how tone ultimately dictates their engagement in the process argues that mere utility and usability is not enough. Cultivating desirability, satisfaction, engagement—whatever term one prefers—has potentially the greatest impact on student reception of and interaction with instructor commentary.

As important as content, style, and tone are, these are meaningless if students cannot access instructor feedback effectively and efficiently. Despite the small sample size for my study, my findings led me to reconsider assumptions concerning "digital natives." While many students

are fluent in Instagram, Twitter, or Facebook, those skills do not cleanly translate to other online systems. I see it as parallel to language fluency. Native speakers can accomplish their communication goals somewhat easily, but transferring what has become an unconscious application of grammar and structure to another language system is not an intuitive act. Comparatively, while some icons and functions in digital applications may be consistent, the ability to work with similar systems is not always intuitively transferrable, because the comprehension is more reflexive than analytically intentional.

User 6 did not know that a commented-upon submission was available in Blackboard. Were it not for my prompting, he would not have been effective in completing Task 2. The remaining participants could access their submissions, but experienced frustration and fatigue in trying to view the comments, thereby negatively affecting efficiency and engagement. The default view in "Review Submission" is cramped, requiring frequent horizontal scrolling if columns are not collapsed, but collapsing columns can lead to some information being made available. Inconsistency with icons, hover text, and otherwise unavailable help options impacts the ease of learning—users who had customized the interface on previous occasions to improve viewability couldn't remember how they had done so before. The cognitive load of trying to work within the interface unnecessarily burdens the user and can inhibit users in achieving their goals—if they even can get that far. Based on my research, I maintain that the medium of feedback can have a significant impact on its usability.

Using Jesse James Garrett's five planes of user experience as a theoretical model for responding to student writing,

Implications and Applications

The impetus behind this study was, for me, a personal one: I want to be a better teacher. In my twenty years of teaching writing, I have come to believe that students come into

writing classes with skills, but also with negative self-evaluations of themselves as writers. Therefore, writing—even technical or professional writing—can still be a very personal and emotional process. I entered into my research to learn how to better respond to my students' work in ways that were clear, direct, yet still respectful and considerate of the psychological and emotional effects of critique. This study has led me to rethink some of my practices and adopt some new strategies, namely in the areas of feedback organization and content, style, media, and the necessary negotiations between pedagogy and UX. While the following sections will elaborate on this further, in brief, the takeaways are as follows:

- **Organization and content**: Whether offering criticism or praise, be direct and specific, and provide the rationale for the evaluation.
- **Style**: Be aware that tone can be misunderstood.
- **Media**: Consider integrating multiple media options for response.
- **Pedagogical|UX negotiation**: Anticipate the potential practical impediments to achieving pedagogical goals and implement strategies that allow students to overcome these impediments.

Organization and content.

Employing a strategy like the Toulmin Method (claim, evidence, and warrant) for response can be more useful to students than one-word notes or corrections. Not only can this help to reduce confusion, it also may work to guide students to understand the strategies that more sophisticated writers employ. Providing feedback in this way need not be verbose; it can be as brief as "your topic sentence states X, but the paragraph is more a discussion of Y. How can you rework this so that your purpose is clear?" or "Comma Splice. See textbook pg. 114 to identify and correct."

Instructor response should be a critique, not solely criticism. Simply stated, one should note the strengths, not just the weaknesses—and understand the "why" of either evaluation. As writers work to develop their skill and craft, they need to be aware of what they have done well so they can continue to build upon that, not only where they need improvement. Both criticism and praise should be direct and specific. Just noting "good!" is as unhelpful as marking an "X" for error. In fact, study participants tended to be dismissive of generic positive statements, finding little value in them. Context is key. Again, communicating this doesn't require extensive commentary, as long as it is direct and specific.

Finally, in terms of content, I would argue that it is appropriate and even helpful to indicate suggestions or preferences as such. Recognize the writer's autonomy to make choices—choices that the instructor might not have made, but valid choices all the same. By acknowledging that some comments come not from an authoritarian grader but an engaged reader, students gain by learning how to appeal to audiences who actually want to read their communication.

Style.

While many instructors strive to be positive with their commentary, even good-natured humor might not translate well into text. Be cautious in employing it, or better yet, avoid it all together. Many of the participants in this study perceived comments to have a negative or judgmental tone, though the comments themselves may have objectively seemed neutral. This negative perception was heightened for User 15 in reviewing Instructor 3's comments. While she was familiar with the instructor's personality and dry humor in the classroom, and despite believing that the content of the comments had merit, she initially felt that she, and her work, were being attacked.

Media.

Given that tone (perceived or otherwise) affects reception and application of feedback, it is worthwhile pursuing other formats for providing response. Different media, such as veedback or conferencing, may be employed in place of or in conjunction with traditional text commentary. However, the practical concern for instructors is mainly one of time. To try to balance pedagogical goals with achievable praxis, instructors may want to consider such options as mini-conferences and a comprehensive/holistic video.

In response to my findings concerning student preferences for face-to-face conferences, I am piloting "mini-conferences." The mini-conference is a 5-10-minute one-on-one conference with a student or student project group in which we review the submission together. Conferences are held during office hours or during class in a quiet corner of the classroom (my courses follow a flipped classroom model, so students tend to be working on projects during class). Students can opt to participate, or not—there is no requirement to do so. To honor students' privacy and confidentiality concerning grades, numerical or letter grades are not stated during the conference, though we will review the rubric together. Prior to meeting, I make brief comments on the submission as memory points for discussion. During the conference, we engage in a conversation (the meeting is not a lecture from me) about the submission, with the student or students encouraged to take notes as we discuss. We then turn to the rubric (which is online) and I ask students to, based on our discussion, select the level of proficiency they believe they've achieved for each rubric section. If there is serious disagreement, we may discuss further, but surprisingly, after these conferences, the students tend to evaluate their work realistically—perhaps because they better understand how the rubric components work together in determining their grade.

For students, the benefits of the mini-conference include the face-to-face interaction that many prefer, fewer misinterpretations of instructor tone, immediate clarification if a concept is unclear, greater understanding of how their grades are calculated, and—what I find most important—coming out of the conferences with greater confidence as to what they have done well and why as well as knowing where they can improve and the steps they can take to do so. As an instructor, I've found that mini-conferences are less time-consuming than writing full comments on a draft; the same concepts are communicated, but the conversation goes much faster than writing—possibly because I am spending less time laboring to word a comment so that its tone is not misinterpreted. Noting key words and phrases on the submission acts as a memory aid for later review, and in the "Notes to Learner" section in Blackboard, I provide a quick comprehensive statement that indicates the main concepts covered and that it was reviewed during conference.

In piloting this strategy, I have informally requested feedback from my students as to these mini-conferences. After trying the conference, both my online and on-site students have stated that they prefer it to embedded text commentary, citing such reasons as that they felt it much more helpful, they liked being able to ask questions in the moment, they believed that they came out of the conferences with a much stronger understanding, and that they felt much more encouraged and empowered.

Another strategy I am considering adopting is an assignment-specific comprehensive screencast video. The idea of a summary-type commentary directed to a class is not an original one; I first learned about this ten years ago from a colleague who was using PowerPoints to this end in her online classes. Given my research, I believe that comprehensive feedback communicated through video would provide students with a more effective, efficient, and engaging way to interact with commentary. It is more effective in that using deidentified

examples of student writing in the screencast, students can see simultaneously see instances of and hear explanations concerning error as well as successful strategies. Research by Mayer and Moreno (1998) suggests that mixing modalities improves retention and application. Comprehensive feedback is also more efficient; while it may cover broader issues, it provides a few concrete examples with explanation as to benefits and drawbacks, rather than pointing out each instance in a student submission. Finally, I would maintain that given my findings concerning tone and the considerations about learning styles the study results suggest, video is more engaging to multiple users. It has the potential to provide more conversational commentary, can appeal to both active and reflective learners, and accommodates visual and auditory learning styles.

This strategy is also a time saver for me. My typical workflow for reviewing assignments is to do a quick read-through of the submissions to get a baseline of common issues or strengths (as well as to gauge if there are aspects to the assignment that I might not have communicated effectively). I will still follow this workflow but will add two additional steps: organizing my notes as to those common issues and strengths according to rubric sections, and then creating a comprehensive video for the class to review. While the video is additional work, it also reduces individual commenting time, as students can be directed to review the video. Moreover, even in limiting the video to five minutes, I can provide greater detail and a better explanation than I would with individual comments. For accessibility, I'm taking advantage of YouTube's auto-caption feature and then reviewing and editing the captions.

Pedagogical|UX negotiation.

The final takeaway is one that may be the most difficult to work through, but for me, is the most important given this research: the goals and methods of a learning environment may

be in direct conflict with the student-as-user's goals and preferred practices. These differences can at best be negotiated within certain parameters, but they truly cannot be resolved. In the simplest, most direct terms, instructors must integrate not only the subject matter but the learning environment into their pedagogy.

In *The Elements of User Experience*, Jesse James Garrett (2011) defines five planes or elements of design that shape user experience: strategy (goals), scope (features), structure (architecture), skeleton (design), and surface (interface). Constructing the foundational plane of strategy, according to Garrett, requires answering two questions: "What do we want to get out of this product?" and "What do our users want to get out of it?" (p. 36). If one considers a course a "product" (as dangerous as that may be), the answers to these questions may be in conflict. An instructor's or program's goals for a course typically include:

- Student application of course concepts and material (short- and long-term)
- Student retention of course concepts and material (short- and long-term)
- Student achievement of course outcomes (long-term and cumulative; quantifiable)

Factors influencing these goals range from continuing employment for the instructor (assuming that their students generally achieve course outcomes), the viability and reputation of the program, and institutional accreditation. Students, understandably, have a different focus. As a "user," the student's goals are often prioritized as:

- Passing or higher assignment and course grades (short-term)
- Application in future classes (mid-range)
- Application in career (long-term)
- Reputation of the program and the institution

Student goals are more immediate and individualized. Whether the course is an elective or a requirement, they need to fulfill (i.e., pass) the course in order to graduate. One's GPA is, for

many students, the primary indicator of their ability and potential in their chosen major. The immediate goal is the degree rather than the learning. That being said, students do want their degrees to be meaningful in that the institutions that they are earned from have a reputation for providing quality education.

Using Garrett's five planes as a theoretical model, one finds this dissonance between instructor and student goals on most, if not all, levels. Where students may prefer more directive feedback for ease of application, instructors may maintain that commentary should lead to student investigation and analysis as a way to encourage learning. The concept of "ease" differs slightly between the two groups; while both desire an interface that allows for quick and relatively effortless entry and review of information, students may consider ease to encompass doing the least amount of work necessary to determine how to approach and complete the process of revision. Figure 43 illustrates the application of Garrett's five planes as a theoretical model for analyzing the user experience of instructor commentary.

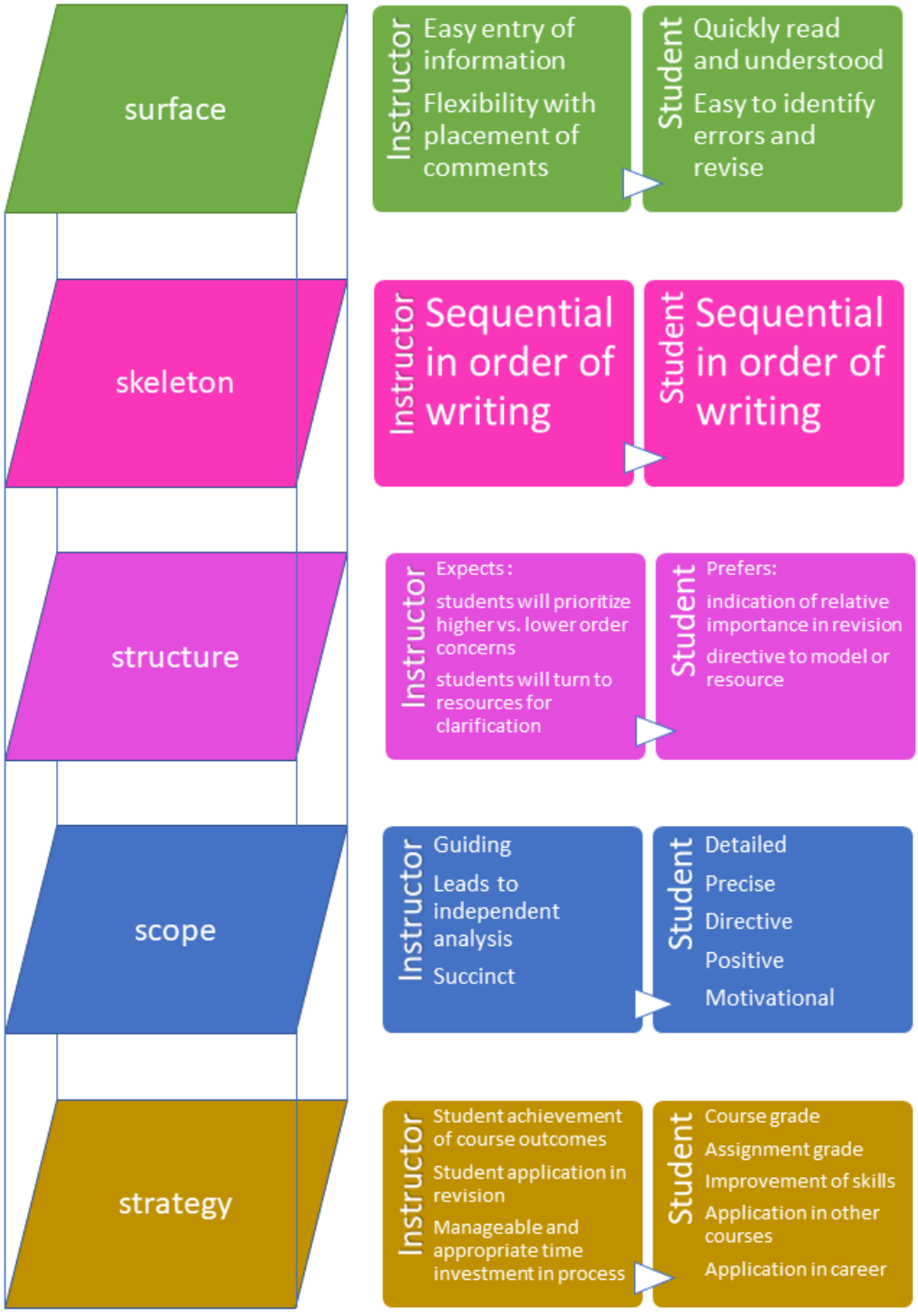


Figure 43: Five Planes of User Experience as a Theoretical Model

My viewpoint is not judgmental of either the ideologies of academe or the at times transactional perspectives of students; instead, it is a recognition that the language, perhaps even the very goals, of UX will not neatly correspond to pedagogy and praxis. While this concept includes notions of complexity in usability studies, at its heart is a dissonance between "product" and "user" goals. For this reason, I believe that instructors must engage in negotiation between pedagogy and UX in the classroom in general, and in feedback specifically.

Tharon Howard's concept of constructivist frameworks (2017) supports this negotiation. The constructivist approach is both holistic and synergistic; it encompasses research and practices that investigate and respond to the "social, aesthetic, and cultural characteristics found in a particular user demographic" (p. 170). As noted earlier, the instructor commentary was mostly usable, if one follows an "accommodationist" (Christiansen and Howard, 2017; Howard, 2017) approach of looking solely for errors with application of concepts. In considering institutional constraints as well as the variations in ideologies and perceptions between "instructor culture" and "student culture," however, negotiation is essential to both instructors and students achieving their goals.

Before explaining what this negotiation should be, let me make it clear what it is not: it is not "dumbing down" or "spoon feeding." Rather, this negotiation must entail first a prioritization of the essential competencies instructors aim for students to achieve in a course, followed by an analysis of the methods and the means that will either facilitate or hinder achieving those competencies. For students, this negotiation may be more difficult to encourage, as grades will still take precedence. However, if the cognitive load can be shifted away from, for example, struggling with the Blackboard interface or deciphering editorial notation to course content comprehension and application, learning can become both more efficient, effective, and ultimately satisfying.

In terms of this study, one area of Pedagogy|UX negotiation that I foresee is in the use of terminology or editorial notation in responding to student writing. To make instructor response accessible to students, instructors do not need to avoid technical language, but they do need to provide a reference. My pedagogical rationale is this: composition and technical communication are professional disciplines that have terminology for a reason. The terms encapsulate concepts more succinctly and directly than lay language. If students are in a class to learn to create deliverables (the term "deliverable" being one often used in technical communication, as well as in other fields), then they should get acquainted with the lingo. The study participants who found abbreviations confusing did so because they had no idea how to decipher the terms. The conflict that arises may be that the student prefers being given the information (definition) in the moment, but the instructor believes that the student will better learn if they look up the information. This is where Pedagogy|UX negotiation comes in; determining how to make the process of finding the information neither immediate nor daunting.

There are a few approaches to addressing this issue. The simplest is to direct the student to a resource, whether it be a textbook, online glossary, or document. Directives should be specific, however, rather than broad. For example, "Comma splice; see chapter 7 under comma usage/errors" is preferable to "Comma splice; see Chapter 7"; while the latter may have the same implied direction, the former provides key terms and subject headings for the student to use while searching. With this negotiation, a reasonable balance can be achieved; the instructor is not solving the problem or defining the term for the student, but the student has unambiguous guidance to solve the problem or learn the definition. Developing an online glossary or document that students know they can refer to may be another negotiation,

especially one that is developed or crowdsourced with the students. The glossary or document can be added to throughout the semester and copied into future course shells.

This research has confirmed for me that instructor commentary is an extremely valuable instructional method that promotes students achieving course competencies; it has also taught me that the means for doing so—particularly via the medium of the LMS—can hinder the effectiveness of my methods. Technology is entrenched in pedagogy and praxis. Negotiation entails acknowledging that although the LMS interface is not "my" subject matter, if students cannot access comments either because of my language or because of the technology (or both), neither of us are achieving our goals in the class.

Given the issues the majority of study participants faced in accessing commentary and navigating it in Blackboard, I cannot stress enough the importance of demonstrating for students the process of accessing assignment submissions and reviewing instructor comments using the interface. Blackboard has a student preview mode in which an instructor can view the course as a student. Instructors should use this preview mode to create a walk through.

In addition, I would suggest that instructors consider creating a fact sheet and/or video demonstration that trains students how to access, review, and respond to feedback. While a class activity or class demonstration is effective in the moment, it may not be easy to learn or memorable. Create the resource for students and send out a reminder to review after the initial assignments in the class have been reviewed and evaluated. Most importantly, recognize that the interface may change with upgrades or updates. In January 15, 2018, Blackboard discontinued the Crocodoc API for inline grading, replacing it with Box (Blackboard, 2018). While Box's interface is slightly less cluttered (there is no comment column taking up space), new problems have been introduced. Box does not consistently render the reviewed assignment in Chrome. Furthermore, the annotated file cannot be downloaded.

While some instructors may be resistant to the concept of having to teach the technology, I maintain this must be negotiated given the technology's potential to hinder students from achieving the aims of the course, and subsequently, the students' achievement of their goals. Institutional constraints (such as mandating the use of a specific learning management system) may require activism at higher levels, but in the interim, instructors should be equipped to anticipate and respond to the practical challenges students may face in accessing, reviewing, and responding to commentary. Creating this type of resource benefits both students and instructors. As a teacher, I would rather my students focus their time and mental energies on the feedback I have labored to create for them; I do not want them expending most of their time and energy trying to figure out the interface that is providing feedback, just as I would not want them to be struggling to decipher my handwriting on a printed essay. If I can simplify that aspect of the process for students, they can better achieve the goals of the course.

Some of my suggestions may seem a bit above some instructors' level of techno-literacy. This leads me to my final point: instructors need to be trained in the technology to effectively teach with the technology. If an instructor is mandated to manage a course using a LMS, training should be mandated (and, ideally, compensated) as well. For training, I suggest both a face-to-face option and online course modules to provide a degree of flexibility. Instructors can be required to complete a "Basic" course, but also would be encouraged to and recognized for completing modules ranging from "Intermediate" to "Expert."

Hindsight and Strategies

Before moving on to the limitations of my study and potential areas for future research, I'd like to discuss what I might have done differently (hindsight) and some approaches I took in my process that may be helpful to others (strategies).

Hindsight.

When I began planning my study, I had labored under a bit of a misconception: too much data was a good thing. In the course of my research on this project, I have collected several gigabytes of raw data, from over 50 pages of assignment artifacts, 16 hours of observation video and interviews, 150 responses to four different surveys, sixteen interview transcriptions, and sixteen learning styles assessments. In retrospect, I would have limited the scope of my data collection to respond to my research questions, or, at the very least, have chosen not to pursue analysis for certain data collected. For example, the research question "How are instructors providing feedback to their students" could have been triangulated with 2311 Instructor survey responses, 2311 Student survey responses, and the artifacts collected during user testing. Given that my study has acknowledged limitations as to the user population, the National Instructor survey, while interesting in its results, was not necessary to this project. Likewise, while I was extremely interested in exploring the correlation (or lack of correlation) between learning styles assessments and responsiveness to different media/ styles of instructor feedback, the assessment results did not directly tie to my research questions. While I had wondered if (and how) learning styles were possible factors affecting how the medium of feedback may impact its usability, my study did not need (and ultimately, could not make use of) this data in responding to this research question.

I would have also improved upon other facets of my research design. I initially wanted to compare screencasting with embedded text commentary. My recruitment materials, however, did not include a checkbox option for instructors to indicate whether they would be interested in learning and using screencasting. The result was that I had no comparison data with screencasts/veedback. While I still believe that my research has led me to findings that can improve the way instructors provide feedback, I did need to alter my focus. Also, I believe that

student survey and user testing results might have been different had I included a brief demo of veedback for participants to review. The use of video in this way was not a familiar concept, so participants might have responded differently if they understood what it entailed.

Strategies.

This section is primarily directed to others who are considering different (and more graduate student cost-friendly) technologies for data analysis. Research can be costly both in time and in actual money. While there was little I could do to avoid gift card expenditures for study participant compensation, I did learn two "hacks" that saved time and money.

Transcribing interviews can be a lengthy and at times frustrating task. There are paid options such as hiring a transcriptionist or purchasing software, but a free and relatively reliable hack is to use YouTube's auto-caption function and then edit the captions. At present, this function works best with native English speakers, but it still provides a workable guideline for most situations. The interface pauses the recording while captions are edited, and users have the option of slowing down or accelerating the playback speed. In addition, one can save one's progress to return to editing later. To protect participant privacy, I suggest at minimum using a secure account with a complex password for uploading the video, ensuring that its status is private, and stripping any identifiers from the file name and transcription. While transcribing, each occurrence of an individual beginning speaking was prefaced with a code (such as "U15:" or "F:" for facilitator). Once the file was transcribed, I downloaded the transcription file (SubViewer, or .sbv), opened it up in Microsoft Word, and proceeded to run a macro I created that stripped all line breaks, inserted a line break before a code (e.g., "U15:") and a tab afterwards, and then converted the text to a table with rows predicated on the code. Once the

sections were easily defined in this way, I could work with the text to either analyze content manually or plug into free online apps such as word frequency checkers.

Determining the relationships between quantifiable data can also be challenging and time-intensive, especially when done manually, and particularly if (like me) one does not have strong foundations in statistical analysis. At first, I had attempted to tally each learning styles assessment using basic Excel total functions; however, the spreadsheet generated by Qualtrics was not usable, and my calculations were often in error. Thankfully, a good (invaluable) friend introduced me to Pivot Tables in Excel, which allow for drag-and-drop calculations and comparisons between multiple fields within a defined table. Data that I had spent weeks trying to tabulate into learning styles profiles were processed within seconds. While an explanation of the potential uses and a walkthrough of the processes are too lengthy to develop here, I strongly recommend learning about and using Pivot Tables to aid in data analysis.

Limitations and Future Research

While the findings from this study are suggestive as to how instructor feedback can be more usable for students, they are not conclusive. One of the limitations of this study is its small and focused sample size, primarily representing instructors and students in one class at one institution. In addition, one instructor's feedback and students were disproportionately represented in the study, comprising 75% of the users tested. Multiple factors may have influenced student reception and application of feedback, including the individual instructors' experience, the artificiality of the lab environment (and potentially using unfamiliar technology), even factors such as the gender and socioeconomic backgrounds of both participants and instructors. In acknowledging these limitations, however, I maintain that adopting some of the better practices detailed earlier would at worst have no effect on student access to and

reception and application of feedback; at best, these practices will potentially make feedback more effective, efficient, engaging, error-tolerant, and easy to use.

The limitations of this work are also opportunities for future research. Ideally, this study could be replicated (as my study was based on Still and Koerber's 2010 research) at other institutions, in other regions, with different classes and more diverse populations. Doing so would help determine what (if any) inconsistencies exist and may shed insight into different regional and institutional cultures in this regard. As well, I would like to see the initial research goals of this dissertation achieved: to comparatively evaluate the usability of different media for feedback.

This research in and of itself has raised other questions worthy of exploration. Given the lack of conclusive data concerning the relationship between individual learning styles and classroom practice, more focused research analyzing the UX of feedback media in terms of learning styles could be a fruitful endeavor. In conducting this study, I was surprised by student perceptions of what constituted "good writing" and achievement in a writing class, especially for English language learners. Some of these beliefs, including the concept of quantifiable performance and an emphasis on grammatical correctness, could be inhibiting; how can teachers, programs, and institutions affect more productive changes to these mindsets?

As with all pedagogy and praxis, my findings and recommendations resulting from this study are subject to change. The adaptation of new or yet-undiscovered technologies may bring about new approaches; generational shifts in both the student and instructor populations may affect learning and communication styles. The key, however, is to be receptive to what students communicate to us as to effective strategies and styles, and honor that learning is not a one-sided lecture, but a multi-path conversation.

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Appendix A

National Instructor Survey Questions and Results

Introduction

National Instructor Survey If you are an instructor over the age of 18 who teaches writing or multimodal composition, I'd appreciate your help in responding to a survey about your perceptions and experiences of providing feedback to students.

What is this project studying?

I am conducting dissertation research regarding instructors' and students' perceptions and use of feedback for writing/media instruction. It is my hope that findings from this study will help to inform best practices in providing feedback to students.

What would I do if I participate?

In this survey, you will be asked to respond to questions concerning your thoughts, feelings, and experiences as an instructor who provides feedback to students.

How will I benefit from participating?

There is no direct benefit to you for participating in this study. However, by participating, you will provide valuable information.

Can I quit if I become uncomfortable?

Yes, absolutely. Your participation is completely voluntary. Dr. Rice, Ms. Beaudin, and the Institutional Review Board have reviewed the questions and think you can answer them

comfortably. You may skip any question you do not feel comfortable answering. You can also stop answering questions at any time. You do not need to complete the survey. Participating is your choice. However, we do appreciate any help you are able to provide.

How long will participation take?

The survey that follows should take approximately 10-15 minutes to complete.

How are you protecting privacy?

The survey itself is anonymous. Following submission of the survey, you will be asked if you are willing to be contacted for a brief interview, and if so, to provide your name and e-mail address. If you choose to provide your contact information, that information is in no way linked to your survey responses. Your name will not be linked to any documentation and any use of this material in reports, publications or presentations will never be associated with participants in this study without permission. No one other than the researchers associated with this project will have access to the raw data. The survey itself is administered on a secure site. All related documentation will be stored either in a locked file cabinet in the researcher's office or on a password protected computer. De-identified data (except for video recordings) will be uploaded to Rhetoric.io and the Research Exchange, data repositories for writing studies and related fields.

I have some questions about this study. Whom can I ask?

The study, "Evaluating the Usability of Instructor Feedback," has been approved by the Human Research Protection Program at Texas Tech University (#504676) and is being conducted by Andrea L. Beaudin (phone#:806.834.1232/ email andrea.beaudin@ttu.edu) and is overseen

by Dr. Rich Rice in the Department of English (phone #: 806.319.5894/ email rich.rice@ttu.edu). You may contact either of them with any questions you may have.

TTU also has a Board that protects the rights of people who participate in research. You can ask them questions at 806-742-2064. You can also mail your questions to the Human Research Protection Program, Office of the Vice President for Research, Texas Tech University, Lubbock, Texas 79409 or email them to hrpp@ttu.edu.

Your input is greatly appreciated. Thank you!

If you agree to the above, please select "I agree," if not, please select "No Thanks."

Answer	%	Count
I agree	100.00%	69
No Thanks	0.00%	0
Total	100%	69

Are you aged 18 or older?

Answer	%	Count
Yes	100.00%	69
No	0.00%	0
Total	100%	69

What best describes the institution(s) at which you teach?

Answer	%	Count
Two-Year College	14.49%	10
Four-Year College	23.19%	16
University	56.52%	39
Other (please explain)	5.80%	4
Prefer not to respond	0.00%	0
Total	100%	69

Other (please explain)

- Online Center for Talented Youth
- Public School Teachers
- 0-6 pharmacy school
- University AND two-year

What is your current position/title?

Answer	%	Count
Instructor	20.29%	14
Lecturer	11.59%	8
Professor	47.83%	33
Other (please indicate)	20.29%	14
Prefer not to respond	0.00%	0
Total	100%	69

Other (please indicate)

- no rank--tenured
- Graduate student
- Graduate Teaching Assistant
- Coach
- Graduate Teaching Associate
- Associate director
- Director of First Year Writing
- Tenured Instructor
- Adjunct lecturer
- graduate assistant
- Adjunct
- Assistant Professor
- TA
- GTA

Where is your institution or are your institutions located? (Select all that apply)

Answer	%	Count
Alabama	8.70%	6
Alaska	1.45%	1

Answer	%	Count
Arizona	2.90%	2
Arkansas	2.90%	2

Answer	%	Count
California	7.25%	5
Colorado	5.80%	4
Connecticut	2.90%	2
Delaware	2.90%	2
District of Columbia	1.45%	1
Florida	8.70%	6
Georgia	1.45%	1
Hawaii	2.90%	2
Idaho	4.35%	3
Illinois	7.25%	5
Indiana	1.45%	1
Iowa	1.45%	1
Kansas	2.90%	2
Kentucky	4.35%	3
Louisiana	1.45%	1
Maine	1.45%	1
Maryland	4.35%	3
Massachusetts	2.90%	2
Michigan	4.35%	3
Minnesota	1.45%	1
Mississippi	1.45%	1
Missouri	4.35%	3
Montana	1.45%	1
Nebraska	1.45%	1
Nevada	2.90%	2
New Hampshire	1.45%	1
New Jersey	2.90%	2
New Mexico	1.45%	1
New York	5.80%	4
North Carolina	1.45%	1
North Dakota	1.45%	1
Ohio	7.25%	5
Oklahoma	1.45%	1
Oregon	4.35%	3
Pennsylvania	7.25%	5
Puerto Rico	1.45%	1
Rhode Island	2.90%	2
South Carolina	1.45%	1
South Dakota	1.45%	1
Tennessee	1.45%	1
Texas	11.59%	8
Utah	2.90%	2
Vermont	2.90%	2
Virginia	4.35%	3
Washington	4.35%	3
West Virginia	2.90%	2
Wisconsin	1.45%	1
Wyoming	1.45%	1
American Samoa	0.00%	0
Guam	0.00%	0
Northern Marianas Islands	0.00%	0
Virgin Islands	0.00%	0
Alberta	0.00%	0
British Columbia	0.00%	0
Manitoba	0.00%	0
New Brunswick	0.00%	0
Newfoundland and Labrador	0.00%	0
Nova Scotia	0.00%	0
Ontario	0.00%	0
Prince Edward Island	0.00%	0
Quebec	0.00%	0
Saskatchewan	0.00%	0
Northwest Territories	0.00%	0
Nunavut	0.00%	0
Yukon	0.00%	0
Outside of the US and Canada	1.45%	1
Prefer not to respond	0.00%	0
Total	100%	69

What is the setting for your classes (choose all that apply):

Answer	%	Count
Face to Face	94.20%	65
Online	27.54%	19

Answer	%	Count
Hybrid	30.43%	21
Total	100%	69

Approximately how long have you been teaching (in any discipline)?

Answer	%	Count
less than 2 years	1.45%	1
2-5 years	13.04%	9
6-10 years	28.99%	20
11+ years	56.52%	39
Total	100%	69

Approximately how long have you been teaching writing or multimodal courses (such as Composition, Technical Writing, or writing in other disciplines)?

Answer	%	Count
less than 2 years	5.80%	4
2-5 years	13.04%	9
6-10 years	31.88%	22
11+ years	49.28%	34
Total	100%	69

What level courses do you typically teach?

Answer	%	Count
undergraduate	71.01%	49
graduate	1.45%	1
both undergraduate and graduate	27.54%	19
Total	100%	69

For the following questions, please indicate the frequency with which you use the listed types of media for feedback on assignments submitted for a grade:

Question	Always		Usually		Sometimes		Rarely		Never		Total
Handwritten feedback on printouts	13.04%	9	20.29%	14	23.19%	16	14.49%	10	28.99%	20	69
Embedded text commentary in digital documents (e.g., MS Word review functions, Adobe Acrobat commenting)	26.09%	18	34.78%	24	26.09%	18	7.25%	5	5.80%	4	69
Embedded audio feedback in digital documents (e.g., Ms Word, Adobe Acrobat)	0.00%	0	2.90%	2	14.49%	10	13.04%	9	69.57%	48	69
Screencast/ video feedback in digital documents (e.g., Jing, Camtasia, Captivate)	4.35%	3	2.90%	2	11.59%	8	18.84%	13	62.32%	43	69
Other (please explain)	9.62%	5	13.46%	7	21.15%	11	5.77%	3	50.00%	26	52

Other (please explain)

- face-to-face conference
- Sometimes I use annotated screenshots as part of my feedback. I also sometimes use photographs--for example, when I commented on student presentations this

week, I included several photos to demonstrate their body language or something positive/negative about their slides.
- Audio feedback using Audition in addition to Track Changes.
- face to face meetings in my office or during class
- Writing conferences
- Typed feedback on separate sheet
- face to face individual student conferences
- Face to Face conference
- rubric comments, electronically, through Blackboard or Turn it In (and audio and embedded text commentary through those)
- conferencing
- oral feedback--conference or group
- Verbal feedback in one-to-one conference
- Rubrics
- Face-to-face conferences
- Separate text/word doc
- face to face
- Blackboard Grading Tools
- oral in person
- I often offer students non-embedded digital feedback—i.e., letters or emails responding to their drafts.
- Not applicable
- Verbal in Conference
- face-to-face
- Rubrics ratings with comments
- Face-to-face feedback conversation
- email or letter written in MSWord
- ftf conference
- face-to-face
- CANVAS Video
- I have used all of the above modes, but I now give holistic feedback via discussion boards.
- f2f conference

Do you allow revision of major assignments (either select assignments or all) for your writing courses?

Answer	%	Count
Yes, for the chance to earn a higher grade on that assignment	58.82%	40
Yes, for consideration as part of a larger project (e.g., a final portfolio)	32.35%	22
No	8.82%	6
Total	100%	68

For the next section, please indicate your level of agreement with the following statements:

Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Count
I spend a manageable and appropriate amount of time commenting and evaluating each assignment	12	35	8	12	0	67
I believe my students understand the feedback and the rationale for the grade	11	47	8	1	0	67
I believe my students are able to apply the feedback to revision and/or subsequent assignments	11	47	7	2	0	67

If you have anything you'd like to add concerning the topic of writing feedback, please feel free to enter your comments here:

- I have asked my students how they feel about my handwritten responses to their writing. Those who have answered say they appreciate it because their previous teachers never took the time to write in-depth, critical responses like I do. It is time-consuming, but I believe students learn from their mistakes. It is my job to point those out to them, explain what is wrong/missing in their writing, and then provide more feedback and opportunities for revisions.
- our teaching load is just too great
- I've been using screencasting to give feedback on multimodal projects (websites, text/image combos, infographics), and I like it a lot. It saves me a lot of time and I think I can say more to students, with more nuance and clearer explanations, than if I were to comment in writing. Sometimes with purely text projects, I'll do track

changes/comments on the Word doc and then do a screencast (showing the doc) for my end comments. This works well for me, too.

- Thanks for doing this survey! It's an important topic.
- The second to last question about allowing for revision was confusing. I build revision into all my major projects, so by definition I "allow" for it, but it's not for the reasons this question listed as options. Thank you.
- I was confused by the questions on the previous page and wasn't sure which radio button to choose. It seems like I am spending an UNMANAGEABLE amount on feedback. In other words, I'm speding [*sic*] more time providing feedback than I would like to or that is even reasonable.
- I usually try to separate feedback from evaluation and I always build drafting and early feedback from both peers and me into the process.
- As someone who has taught writing at middle school, high school, community college, and now at the university -- and who also works with pre-service and in-service teachers -- my philosophy on feedback is simple: early and often. The "final" grading of my students' writing actually takes the least amount of time because I have typically seen their writing develop over time and I have held at least one extended writing conference along with many opportunities to talk during writing workshop time in class. So, my feedback is on-going and consistent, from initial brainstorming right up to the final draft.
- Made me chuckle to think about a "manageable" amount of time. I suspect I'm an "over commenter" and do too much in terms of responding to my students' drafts. But they

tend to write on my course evaluations that the written feedback was tremendously helpful and that they really value having a teacher who takes their writing so seriously.

- I focus my feedback on what I think will help them with revisions or with future assignments. Sometimes I think this can lead to forgetting to praise the positive which is important too. I think there is also a challenge between giving general feedback that can be applicable to their future writing and giving feedback that is highly specific to the content of this particular essay (which can also affect their future writing but perhaps it is harder for them to see how it is applicable to future writing). This means that in reality I give more general feedback than I think I should in theory.
- I don't use the word "feedback" because of its connotations. First of all, as a musician, I associate it with unwanted noise and distortion. Even though some students regard any sort of criticism in the same way, I use the terms "review," "critique," or "comments and suggestions" instead. In my view, the word "feedback" conflates the concept of the critique with pop psychology concepts, surveys on products for popular consumption, and a wide range of other types of responses. I think that if we want students to take our instruction seriously, the use of this term is self-defeating.
- I could more accurately answer the previous set of questions with an always/sometimes/never option. Sometimes they understand the written feedback, sometimes I can see them applying the information to future assignments, and sometimes there's actually improvement over time!
- Regarding the manageable amount of time: I spend too much time commenting, considering I don't know how many students really read the comments I give. While I have not had students tell me to my face that they don't bother reading the comments, I have had students tell me they appreciate my level of feedback. For that reason, I

continue to give more feedback than people like Nancy Sommers recommend even though it is time-intensive.

- I like using the audio comments in combination with embedded comments and a rubric. This provides the big picture and personalization plus detailed comments on smaller parts that are done well or could be improved, plus comprehensive feedback on the rubric. Students seem to like the audio comments.
- I have come to realize that students need to be given the criteria and language to understand feedback before the feedback and or comments are given.
- Maybe I should not have chosen agree for my students being able to use the feedback I provide. When we talk about it, they seem to understand what I'm suggesting they do, so that doesn't seem to be "the" problem, but about half of the time the revisions are minimal. The better students really take it to heart and do all they can, but the students who need more help seem less able to apply the comments, whether written or audio.
- Audio response has proven to be the better mode of response when compared to written. Check the literature.
- I spend way more than a manageable amount of time giving my students feedback on their writing. I am working on how to make this workload manageable, but right now, it is not.
- I often ask students to interact with my feedback in discussion. I ask as a discussion prompt: what did you instructor tell you in the feedback? What was your reaction? How will you use the feedback? I found that the students read my feedback more now than before I added the discussion prompt. I do it every week. In week one, I just ask if they

can find it and why it's so important to learning. This way I can direct them to the feedback area if they can't find it.

- It takes forever and a day for me to give feedback that I think is useful and useable -- and that addresses higher order concerns. Noting grammar errors is easy; pointing out that paragraphs are out of order, explaining why the order doesn't work, and suggesting an alternative without telling a student what to do is not easy. Not at all.
- I wish I could say students take my commentary and apply it, but I really don't know (other than revision). Would love to see if some of them do.
- Another way I typically give feedback is through one-on-one conferencing. I conference with my students several times per semester, and I usually give them back their papers with my written feedback at that time, so they can spend a few minutes reading my feedback and then we talk in more detail and they can ask questions. I know this isn't feasible in many cases, but I'm lucky in that I'm at a small school, have managable class sizes & that I'm permitted to cancel class in order to do these conference days.
- It takes time for students to get used to varying levels of feedback on their drafts. They are used to getting summative, not formative comments. For some reason, in the cases where I have screen-casted comments, I'm able to be more comprehensive with my feedback, and students are able to incorporate my comments into their final draft. This

coul dbe [*sic*] because in the few cases where I've screen casted, I've done so with very strong writers.

- I provide an exemplar before individual feedback so the student understands the rationale for my grading.
- I also employ in person feedback.
- Best feedback I have used is set face-to-face writing groups that I also meet where we discuss drafts (hybrid classes). Set online writing groups in online courses to discuss drafts are also useful.
- I have discovered through my own research that most students do not pay attention to commentary on their essays unless they disagree with the grade they received on the essay. For example, if students thought they would be getting a "B" on an essay and got a "C" instead, the students would then read the commentary. Accordingly, I switched to face-to-face grading where the students make the notes on their essay and then we discuss the grade to be awarded. Each essay gets better--the last essay is leagues beyond the first one.
- Conceptual knowledge about business and professional writing is assumed but often not taught explicitly in our courses. Further, concepts are often unclear to students when used in feedback on their performance.
- I also use rubrics that they have so they can see what I am looking for and grading on.
- I wish that doing it well were not so tedious.
- This is a huge topic and I'm not sure what your interests are, so I don't know what comments to provide to you.
- I used to comment on all rough drafts so that students could revise based on instructor feedback; I saw that most students fixed a few typos and considered that a revision. I

was making the same comments on the graded draft. Now I return the draft with comments and a grade. I allow students two weeks to revise, based on my comments. No too many take advantage of this policy.

- I tell students at all levels that commentary is conversation: I am having a conversation with them and with their text via the comments I make (which themselves tend to be conversational in nature--short comments akin to back-channel cues in speech like "yes," "i'm with you, here," etc; longer comments on ideas that arise for me as I'm reading; and questions.
- It is interesting that you did not inquire about how I use peer-to-peer feedback, which is a critical part of my pedagogy. Also, my students go through a few rounds of revision before turning in a final draft, so your question about revision misses these extra layers of feedback. Asking how many drafts students go through before turning in a final draft would have helped.
- I get bogged down in evaluating and feedback without a timer, so I changed my approach to using a rubric, having them self-score, and then discussing their choices in a conference setting. Feedback has become more valuable to students, as we discuss my comments and they see me make them, as opposed to it all being after the fact.
- While I believe my students "are able to apply" my feedback, they do not always do so. Their revisions are sometimes cursory and grade-driven rather than significant in terms of amount, depth, and/or personal investment.

Appendix B

English 2311 Instructor Survey Questions and Results

ENGL 2311 Instructor Survey

If you are an instructor over the age of 18 who teaches English 2311 (Introduction to Technical Writing) at Texas Tech, I'd appreciate your help in responding to a survey about your perceptions and experiences of providing feedback to students.

What is this project studying?

I am conducting dissertation research regarding instructors' and students' perceptions and use of feedback for writing/media instruction. It is my hope that findings from this study will help to inform best practices in providing feedback to students.

What would I do if I participate?

In this survey, you will be asked to respond to questions concerning your thoughts, feelings, and experiences as an instructor who provides feedback to students.

How will I benefit from participating?

There is no direct benefit to you for participating in this study. However, by participating, you will provide valuable information.

Can I quit if I become uncomfortable?

Yes, absolutely. Your participation is completely voluntary. Dr. Rice, Ms. Beaudin, and the Institutional Review Board have reviewed the questions and think you can answer them

comfortably. You may skip any question you do not feel comfortable answering. You can also stop answering questions at any time. You do not need to complete the survey. Participating is your choice. However, we do appreciate any help you are able to provide.

How long will participation take?

The survey that follows should take approximately 10-15 minutes to complete. How are you protecting privacy? The survey itself is anonymous. You can choose not to participate in this survey. You may also choose not to answer particular questions.

Following submission of the survey, you will be asked if you are willing to be contacted about further participation, and if so, to provide your name and e-mail address. Your contact information is not linked to your survey responses. Your name will not be linked to any documentation and any use of this material in reports, publications or presentations will never be associated with participants in this study without permission. No one other than the researchers associated with this project will have access to the raw data.

The survey itself is administered on a secure site. All related documentation will be stored either in a locked file cabinet in the researcher's office or on a password protected computer. De-identified data (except for video recordings) will be uploaded to Rhetoric.io and the Research Exchange, data repositories for writing studies and related fields.

I have some questions about this study. Whom can I ask?

The study, "Evaluating the Usability of Instructor Feedback," has been approved by the Human Research Protection Program at Texas Tech University (#504676) and is being conducted by Andrea L. Beaudin (phone#:806.834.1232/ email andrea.beaudin@ttu.edu) and is overseen by Dr. Rich Rice in the Department of English (phone #: 806.319.5894/email rich.rice@ttu.edu). You may contact either of them with any questions you may have.

TTU also has a Board that protects the rights of people who participate in research. You can ask them questions at 806-742-2064. You can also mail your questions to the Human Research Protection Program, Office of the Vice President for Research, Texas Tech University, Lubbock, Texas 79409 or email them to hrpp@ttu.edu. Your input is greatly appreciated. Thank you!

If you agree to the above, please select "I agree," if not, please select "No Thanks."

Answer	%	Count
I agree	100.00%	7
No Thanks	0.00%	0
Total	100%	7

Are you age 18 or older?

Answer	%	Count
Yes	100.00%	7
No	0.00%	0
Total	100%	7

What is your current position/title?

Answer	%	Count
Instructor	71.43%	5
Lecturer	14.29%	1
Professor	0.00%	0
Other (please indicate)	14.29%	1
Prefer not to respond	0.00%	0
Total	100%	7

Other (please indicate)

- GPTI

What is the setting for your classes (choose all that apply):

Answer	%	Count
On site	100.00%	7
Online	14.29%	1
Hybrid	0.00%	0
Total	100%	7

Approximately how long have you been teaching (in any discipline)?

Answer	%	Count
less than 2 years	0.00%	0
2-5 years	57.14%	4
6-10 years	0.00%	0
11+ years	42.86%	3
Total	100%	7

Approximately how long have you been teaching writing or multimodal courses (such as Composition, Technical Writing, or writing in other disciplines)?

Answer	%	Count
less than 2 years	28.57%	2
2-5 years	28.57%	2
6-10 years	0.00%	0
11+ years	42.86%	3
Total	100%	7

What level courses do you typically teach?

Answer	%	Count
undergraduate	85.71%	6
graduate	0.00%	0
both undergraduate and graduate	14.29%	1
Total	100%	7

For the following questions, please indicate the frequency with which you use the listed types of media for feedback on assignments submitted for a grade:

Question	Always		Usually		Sometimes		Rarely		Never		Total
Handwritten feedback on printouts	0.00%	0	28.57%	2	14.29%	1	57.14%	4	0.00%	0	7

Embedded text commentary in digital documents (e.g., MS Word review functions, Adobe Acrobat commenting)	28.57%	2	71.43%	5	0.00%	0	0.00%	0	0.00%	0	7
Embedded audio feedback in digital documents (e.g., Ms Word, Adobe Acrobat)	0.00%	0	0.00%	0	0.00%	0	0.00%	0	100.00%	7	7
Screencast/ video feedback in digital documents (e.g., Jing, Camtasia, Captivate)	0.00%	0	0.00%	0	0.00%	0	0.00%	0	100.00%	7	7
Other (please explain)	0.00%	0	0.00%	0	60.00%	3	0.00%	0	40.00%	2	5

Other (please explain)

- Face-to-face conference feedback
- Audio feedback - not embedded
- In-line grading feature in Blackboard

Do you train students on how to review and apply feedback? (please select all that apply)

Answer	%	Count
Yes, as an in-class lesson/activity	57.14%	4
Yes, as part of course materials (either in syllabus, handouts, or digital resources)	14.29%	1
Yes, in individual conference, meetings, or communication	57.14%	4
No	14.29%	1

Total	100%	7

Do you allow revision of major assignments (either select assignments or all) for English 2311?

Answer	%	Count
Yes, for the chance to earn a higher grade on that assignment	57.14%	4
Yes, for consideration as part of a larger project (e.g., a final portfolio)	14.29%	1
No	28.57%	2
Total	100%	7

For the next section, please indicate your level of agreement with the following statements:

Question	Strongly Agree		Agree		Neither Agree nor Disagree		Disagree		Strongly Disagree		Total
I spend a manageable and appropriate amount of time commenting and evaluating each assignment	42.86%	3	28.57%	2	14.29%	1	14.29%	1	0.00%	0	7
I believe my students understand the feedback and the rationale for the grade	0.00%	0	85.71%	6	14.29%	1	0.00%	0	0.00%	0	7
I believe my students are able to apply the feedback to revision and/or subsequent assignments	0.00%	0	100.00%	7	0.00%	0	0.00%	0	0.00%	0	7

If you have anything you'd like to add concerning the topic of writing feedback, please feel free to enter your comments here:

- The previous question asking if I think students *understand* and *use* feedback, it is hard to tell. I hope so and I know some students come to my office hours to ask for clarification. My assumption is that if students do not ask for help, they understand.

Appendix C

English 2311 Student Survey Questions and Results

ENGL 2311 Students

I am conducting dissertation research regarding instructors' and students' perceptions of and use of feedback for writing/media instruction. If you are a student over the age of 18 taking English 2311 (Technical Writing) at Texas Tech, I'd appreciate your help. The survey that follows should take approximately 10-15 minutes to complete.

You can choose not to participate in this survey. You may also choose not to answer particular questions. Neither I nor your instructor will know if you participated or what your responses are. Responding to this survey is not work for a required grade in English 2311.

You may also choose to respond to the survey anonymously and provide no identifying information. Please contact andrea.beaudin@ttu.edu if you have questions about the survey.

The research experiment is entitled “Evaluating the Usability of Instructor Feedback,” and it is being overseen by Dr. Rich Rice (phone #: 806.319.5894; email rich.rice@ttu.edu) and will be conducted by Andrea L. Beaudin (phone#806.834.1232; email andrea.beaudin@ttu.edu). Dr. Rice and the usability team will answer any questions that you have about the study. For questions about your rights as a subject or about injuries caused by this research, contact the Texas Tech University Human Research Protection Program, Administration Building, Room 357, Box 41075 | MS 1075, Lubbock, TX 79409-1075. Or, you can call (806) 742-2064 or email hrpp@ttu.edu.

Your input is greatly appreciated. Thank you!

If you're willing to take this survey and are a student currently enrolled in English 2311 at Texas Tech University, please click "I agree." Otherwise, please click "No Thanks"

If you agree to the above, please select "I agree," if not, please select "No Thanks."

Answer	%	Count
I agree	100.00%	65
No Thanks	0.00%	0
Total	100%	65

Are you age 18 or older?

Answer	%	Count
Yes	100.00%	63
No	0.00%	0
Total	100%	63

What is your age?

Age	Female	Male	Total Age
18		1	1
19	6	4	10
20	10	3	13
21	11	6	17
22	5	1	6
23		2	2
24	1	3	4
25	1	3	4
26		1	1
27		1	1
28		1	1

What is your gender?

Answer	%	Count
Female	55.74%	34
Male	44.26%	27
Other/Prefer not to answer	0.00%	0
Total	100%	61

What is your declared major?

Answer	%	Count
Advertising (ADV)	1.64%	1
Agribusiness (AGBS)	0.00%	0
Agricultural and Applied Economics (AAEC)	1.64%	1
Agricultural Communications (ACOM)	0.00%	0
Animal Science (ANSC)	1.64%	1
Anthropology (ANTH)	1.64%	1
Apparel Design and Manufacturing (ADM)	0.00%	0
Applied Arts and Science (AAS)	1.64%	1
Architecture – Bachelor of Science (ARBS)	0.00%	0
Art (ART)	0.00%	0
Biochemistry (BCHE)	0.00%	0
Biology (BIOL)	1.64%	1
Cell and Molecular Biology (CMBI)	0.00%	0
Chemical Engineering (CHE)	16.39%	10
Chemistry (CHEM)	0.00%	0
Civil Engineering (CE)	0.00%	0
Communication Studies (COMS)	4.92%	3
Computer Engineering (CMPE)	0.00%	0
Computer Science (CS)	4.92%	3
Conservation Law Enforcement (CNLE)	0.00%	0
Construction Engineering (CONE)	0.00%	0
Dance (DAN)	0.00%	0
Early Childhood (EC)	0.00%	0
Economics (ECO)	1.64%	1
Electrical Engineering (EE)	0.00%	0
Electronic Media and Communications (EMC)	0.00%	0
Energy Commerce (ENCO)	0.00%	0
English (ENGL)	0.00%	0
Environmental Engineering (ENVE)	0.00%	0
Exercise and Sport Sciences (ESS)	14.75%	9
Family and Consumer Sciences (FCS)	0.00%	0
Finance (FIN)	0.00%	0
Food Science (FDTS)	0.00%	0
General Business (AGGB)	1.64%	1
General Business (GB)	0.00%	0
General Studies (GST)	0.00%	0
Geography (GEOG)	0.00%	0
Geosciences (GEOS)	3.28%	2
Global Studies (GLST)	0.00%	0
History (HIST)	0.00%	0
Honors Arts and Letters (HAL)	0.00%	0
Human Development and Family Studies (HDFS)	4.92%	3
Human Sciences (HS)	3.28%	2

Answer	%	Count
Industrial Engineering (IE)	0.00%	0
Interdisciplinary Agriculture (INAG)	0.00%	0
Interior Design (ID)	1.64%	1
International Business	0.00%	0
International Economics (IECO)	0.00%	0
Journalism (JOUR)	0.00%	0
Landscape Architecture (LA)	3.28%	2
Languages and Cultures (LACU)	0.00%	0
Management (MGT)	0.00%	0
Management Information Systems (MIS)	0.00%	0
Marketing (MKT)	1.64%	1
Mathematics (MATH)	3.28%	2
Mechanical Engineering (ME)	1.64%	1
Media Strategies (MDST)	0.00%	0
Microbiology (MBIO)	0.00%	0
Multidisciplinary Science (MSCI)	0.00%	0
Multidisciplinary Studies (MDS)	0.00%	0
Music–Bachelor of Arts (MUBA)	0.00%	0
Music–Bachelor of Music (MUS)	0.00%	0
Natural Resources Management (NRM)	0.00%	0
Nutrition (NTRN)	0.00%	0
Nutritional Sciences and Dietetics (NSCD)	3.28%	2
Personal Financial Planning (PFP)	4.92%	3
Petroleum Engineering (PETR)	0.00%	0
Philosophy (PHIL)	1.64%	1
Physics (PHYS)	0.00%	0
Plant and Soil Science (PLSS)	0.00%	0
Political Science (POLS)	1.64%	1
Psychology (PSY)	3.28%	2
Public Relations (PR)	0.00%	0
Restaurant, Hotel, and Institutional Management (RHIM)	3.28%	2
Retail Management (RTLM)	3.28%	2
Services (CFAS)	0.00%	0
Social Work (SW)	0.00%	0
Sociology (SOC)	1.64%	1
Spanish (SPAN)	0.00%	0
Technical Communication (TCRC)	0.00%	0
Theatre Arts (THA)	0.00%	0
University Studies (UNST)	0.00%	0
Wind Energy (WNEN)	0.00%	0
Zoology (ZOOL)	0.00%	0
Undeclared	0.00%	0
Total	100%	61

What is your current academic classification?

Answer	%	Count
Freshman	0.00%	0
Sophomore	27.87%	17
Junior	42.62%	26
Senior	29.51%	18
Graduate student	0.00%	0
Non-matriculating	0.00%	0
Total	100%	61

What term best reflects your English fluency?

Answer	%	Count
Non-native speaker of English: Novice	0.00%	0
Non-native speaker of English: Intermediate	1.64%	1
Non-native speaker of English: Advanced	8.20%	5
Non-native speaker of English: Superior	6.56%	4
Native speaker of English: Novice	3.28%	2
Native speaker of English: Intermediate	13.11%	8
Native speaker of English: Advanced	27.87%	17
Native speaker of English: Superior	39.34%	24
Total	100%	61

How many college-level writing courses have you taken (including those currently enrolled)?

Answer	%	Count
1	3.28%	2
2	11.48%	7
3	54.10%	33
4	18.03%	11
5	6.56%	4
6	0.00%	0
7+	6.56%	4
Total	100%	61

On a scale of 1-10, with 10 being excellent, please assess your writing skill:

Rank	%	Count
4	3.33%	2

Rank	%	Count
5	5%	3
6	30%	18
7	33.33%	20
8	18.33%	11
9	5%	3
10	5%	3
Total	100%	60

When writing, how important is instructor feedback (either on your previous writing or a draft/earlier version of current writing) to the success of your writing?

Answer	%	Count
Most important	47.54%	29
Important	50.82%	31
Not very important	1.64%	1
Don't take it into consideration or use instructor feedback when writing	0.00%	0
Total	100%	61

When considering the following things you rely on to write a document in a class, rank (1 for the best, 2 for the next best, etc.) in order of their importance to your writing:

Resource	1st		2nd		3rd		4th		5th		Total
Assignment instructions	61.11%	33	22.22%	12	12.96%	7	1.85%	1	1.85%	1	54
Assigned readings	0.00%	0	1.85%	1	14.81%	8	25.93%	14	57.41%	31	54
Student examples	11.11%	6	25.93%	14	24.07%	13	24.07%	13	14.81%	8	54
Instructor lectures in class, notes	12.96%	7	25.93%	14	20.37%	11	25.93%	14	14.81%	8	54
Instructor feedback	14.81%	8	24.07%	13	27.78%	15	22.22%	12	11.11%	6	54

In previous undergraduate writing classes, how have you received instructor feedback on your writing? Check all that apply.

Answer	%	Count
Handwritten feedback on printouts	86.21%	50

Embedded text commentary in digital documents (e.g., MS Word review functions, Adobe PDF commenting, RaiderWriter)	63.79%	37
Embedded audio feedback in digital documents (e.g., MS Word, Adobe PDF)	3.45%	2
Screencast/ video feedback in digital documents (e.g., Jing, Camtasia, Captivate)	3.45%	2
Instructor conference	27.59%	16
Other (please explain)	3.45%	2
Total	100%	58

Other (please explain)

- no other experience
- I haven't taken a previous undergraduate writing class.

Of the types of feedback you have received, which forms of feedback have been most effective for you as a writer? You can drag items from the left column into the box on the top right. You can then drag the items in the box to rank from most effective to least effective. If you've never received a type of feedback, drag that item into the box on the bottom right.

[*data corrupted*]

Other (please explain)

- I haven't taken a previous undergraduate writing class.
- 2

Of the types of feedback listed, whether you have received feedback in this form or not, which do you think would be most effective for you as a writer? Please rank, with 1 as most effective, 2 as less effective than 1, etc. You can drag and drop the items into place.

Question	1		2		3		4		5		6		Total
Handwritten feedback on printouts	54.76%	23	40.48%	17	4.76%	2	0.00%	0	0.00%	0	0.00%	0	42

Question	1		2		3		4		5		6		Total
Embedded text commentary in digital documents (e.g., MS Word review functions, Adobe PDF commenting, RaiderWriter)	14.29%	6	47.62%	20	28.57%	12	7.14%	3	0.00%	0	2.38%	1	42
Embedded audio feedback in digital documents (e.g., MS Word, Adobe PDF)	0.00%	0	2.38%	1	26.19%	11	57.14%	24	14.29%	6	0.00%	0	42
Screencast / video feedback in digital documents (e.g., Jing, Camtasia, Captivate)	2.38%	1	0.00%	0	7.14%	3	28.57%	12	59.52%	25	2.38%	1	42
Instructor conference	28.57%	12	7.14%	3	30.95%	13	4.76%	2	26.19%	11	2.38%	1	42
Other (please explain)	0.00%	0	2.38%	1	2.38%	1	2.38%	1	0.00%	0	92.86%	39	42

Other (please explain)

- I haven't taken a previous undergraduate writing class.

Do you have anything you'd like to add? If so, please use the space below:

- One on one feedback and conference of ideas seems to work best for me!
- n/a
- no
- no
- I find that when an instructor states directly what I did wrong and how I could improve that is the easiest way for me to improve my writing skills.
- no
- Great Job with your presentation!

Appendix D

Feedback Usability Test Script

Legend: F=Facilitator, U = User

Text in ( ) represents behavior to be performed.

Before Testing

Before each session, verify:

1. Computer (running Windows)
2. No browser open/cache cleared
3. MS Word minimized
4. Pen and paper (lined, unlined) available to users
5. Computer set up to a printer
6. Morae set to record
7. Survey up on screen
8. A/V recording correctly

Testing Session

F *greets* U *at door and provides user with consent form. Once* U *completes* Consent Form for Usability Testing*,* F *leads* U *into lab.*

F: (*to U*) Good morning/afternoon/evening. Please have a seat at the computer. (*directs U to desk*)

F: First, I would like to thank you for agreeing to help us instructor feedback for writing assignments. For your information, your participation is voluntary and you are free to leave at any time if you so choose. To help us, we will be asking you to complete specific tasks regarding your instructor's feedback on this computer (*points to computer*. After you've completed the tasks, we'll ask you to complete a brief survey followed by a short interview. All of the information gathered today/tonight will be completely

confidential. I/We will be the only ones with access to this recording. (*Observer activates Morae*.)

To ensure confidentiality, please do not identify yourself. Keep in mind that all identifying information in the transcription of the recording or the transcription of our notes will be deleted from those records.

We are not analyzing your ability to complete a task; rather, we are analyzing the usability of the instructor feedback. There are no right or wrong answers; **you** are not being evaluated. If you have any questions about what we will be doing, feel free to ask me now.

F: (*Answers any questions posed by the participants.*)

F: If you need to leave the room for any reason before we begin, please tell me now.

U: (*asks questions, goes to restroom, etc.*)

F: (*points to survey on screen*) First, I'm going to ask you to complete this survey.

(*after user has completed* survey) Now I'm going to provide you with a scenario and three tasks to complete. You have no time limit in which to complete the tasks. You may leave the testing room at any time and for any reason.

F: As a student in English 2311, you have recently completed an assignment and your instructor has provided feedback. Various tasks will show up on the screen before you; please complete the tasks requested, explaining what you're doing out loud while you're doing it. If at any time you need the task repeated, let me know and I will repeat the task description for you. When you're done, click the red button in the lower right hand corner. The next task will then appear on the screen, and you will click " Ok " to begin.

Any questions?

F: (*Answers any questions posed by the participants.*)

The following tasks will appear through Morae:

- *Your instructor has finished grading your assignment, and you want to access the feedback. Go to Blackboard and access your assignment. Please talk aloud about what you are doing as you go through each step. When you're done, click the red button in the lower right hand corner.*

- *You want to review your instructor's feedback on the assignment-- his/her comments. Review your instructor's comments on the assignment; if you'd like, you can take notes using the pen and paper provided. Please talk aloud about what you are doing as you go through each step. When you're done, click the red button in the lower right hand corner.*

- *Assuming you are planning to revise your assignment, what do you think you need to do? Using MS Word, write up your plan for revision. You can refer to the feedback as often as you like. Please talk aloud about what you are doing as you go through each step. When you're done, click the red button in the lower right hand corner.*

- *Looking at the plan you've just created, what do you think is most important and should be done first? Second? Set up your plan in order of importance; please talk aloud about what you are doing as you go through each step. When you're done, click the red button in the lower right hand corner.*

(*if* U *seems stuck*)

F: Do you feel that you have finished?

(*if* U *only looking at rubric*)

F: What about the embedded comments/video?

(*when* U *has completed tasks*)

F: Thank you for completing the test. Next there will be a brief survey as to your experience.

Please take a minute to another short survey now that you are done. (*Administers* Post-Test Survey). I'm going to step outside for a moment to make sure there were no

problems with recording the data.

Thank you. Now I'd like to ask you some questions about your experience.

- What makes instructor comments useful or usable?
- What specifically did this instructor do that made the comments useful/usable?
- What makes instructor comments not useful or unusable?
- What specifically did this instructor do that made the comments not useful/unusable?
- Is there such a thing as too many comments?
- What is the best way for an instructor to comment on your writing?[11]
- (*Asks relevant questions as to user experience, task failure, or task error*)

F: Thank you for helping us out today. Did you want a copy of your revision plan?

(*Observer stops recording; saves recording and documents with User ID#; hands U gift card*)

F: Would you be willing to share your assignment grade for the purposes of the research?

This information will not be tied to your identity, and will only be used for statistical evaluation. (*If U agrees, provides with 2nd consent*)

Student Usability Pre-Study Survey

Please complete the following survey considering attitudes and approaches to receiving assignment feedback. All of your responses are confidential, and you are free to respond to as many or as few of the questions as you wish. Your responses, however, will help in research aimed at evaluating and/or improving instructor feedback on assignments.[12]

1. What is your gender? [Female] [Male] [Other/Prefer not to answer]
2. What is your declared major/minor?
3. What is your current academic classification?
   a. Freshman
   b. Sophomore
   c. Junior
   d. Senior
4. What term best reflects your English fluency?
   a. Non-native speaker of English: Novice
   b. Non-native speaker of English: Intermediate

[11] Open-ended questions source: Still and Koerber (2010).
[12] Questions 5-8 based on those asked by Still and Koerber (2010).

   c. Non-native speaker of English: Advanced
   d. Non-native speaker of English: Superior
   e. Native speaker of English: Novice
   f. Native speaker of English: Intermediate
   g. Native speaker of English: Advanced
   h. Native speaker of English: Superior
5. How many college-level writing courses have you taken (including those currently enrolled)?
6. On a scale of 1-10, with 10 being excellent, please assess your writing skill:
7. When writing, how important is instructor feedback (either on your previous writing or a draft/earlier version of current writing) to the success of your writing?
   a. Most important
   b. Important
   c. Not very important
   d. Don't take it into consideration or use instructor feedback when writing
8. When considering the following things you rely on to write a document in a class, rank (1 for the best, 2 for the next best, etc.) in order their importance to your writing:
   a. Assignment instructions
   b. Assigned readings
   c. Student examples
   d. Instructor lectures in class, notes
   e. Instructor feedback
   f. Other (please explain)
9. In previous undergraduate writing classes, how have you received instructor feedback on your writing? (check all that apply):
   a. Handwritten commentary/feedback on paper
   b. Embedded written commentary/feedback (RaiderWriter; Blackboard, MS Word or Adobe Acrobat PDF inline commenting/review)
   c. Audio commentary/feedback
   d. Video or screencast commentary/feedback
   e. instructor conference
   f. Other (please explain)
10. Of the types of feedback you have received, which forms of feedback have been most effective for you as a writer? (please rank, with 1 as most effective, 2 as less effective than 1, etc.)
   — Handwritten commentary/feedback on paper
   — Embedded written commentary/feedback (RaiderWriter; Blackboard, MS Word or Adobe Acrobat PDF inline commenting/review)
   — Audio commentary/feedback
   — Video or screencast commentary/feedback
   — Instructor conference
   — Other (please explain)
11. Of all of the types of feedback listed above, whether you have received feedback in this form or not, which do you think would be most effective for you as a writer? (please rank, with 1 as most effective, 2 as less effective than 1, etc.)
   — Handwritten commentary/feedback on paper

- Embedded written commentary/feedback (RaiderWriter; Blackboard, MS Word or Adobe Acrobat PDF inline commenting/review)
- Audio commentary/feedback
- Video or screencast commentary/feedback
- instructor conference
- Other (please explain)

For each of the following questions select either "a" or "b" to indicate your answer. Please choose only one answer for each question. If both "a" and "b" seem to apply to you, choose the one that applies more frequently.[13]

I understand something better after I

(a) try it out.

(b) think it through.

I would rather be considered

(a) realistic.

(b) innovative.

When I think about what I did yesterday, I am most likely to get

(a) a picture.

(b) words.

I tend to

(a) understand details of a subject but may be fuzzy about its overall structure.

(b) understand the overall structure but may be fuzzy about details.

When I am learning something new, it helps me to

(a) talk about it.

(b) think about it.

If I were a teacher, I would rather teach a course

[13] https://www.engr.ncsu.edu/learningstyles/ilsweb.html (Soloman and Felder, 1991, 1994)

(a) that deals with facts and real life situations.

(b) that deals with ideas and theories.

I prefer to get new information in

(a) pictures, diagrams, graphs, or maps.

(b) written directions or verbal information.

Once I understand

(a) all the parts, I understand the whole thing.

(b) the whole thing, I see how the parts fit.

In a study group working on difficult material, I am more likely to

(a) jump in and contribute ideas.

(b) sit back and listen.

I find it easier

(a) to learn facts.

(b) to learn concepts.

In a book with lots of pictures and charts, I am likely to

(a) look over the pictures and charts carefully.

(b) focus on the written text.

When I solve math problems

(a) I usually work my way to the solutions one step at a time.

(b) I often just see the solutions but then have to struggle to figure out the steps to get to them.

In classes I have taken

(a) I have usually gotten to know many of the students.

(b) I have rarely gotten to know many of the students.

In reading nonfiction, I prefer

(a) something that teaches me new facts or tells me how to do something.

(b) something that gives me new ideas to think about.

I like teachers

(a) who put a lot of diagrams on the board.

(b) who spend a lot of time explaining.

When I'm analyzing a story or a novel

(a) I think of the incidents and try to put them together to figure out the themes.

(b) I just know what the themes are when I finish reading and then I have to go back and find the incidents that demonstrate them.

When I start a homework problem, I am more likely to

(a) start working on the solution immediately.

(b) try to fully understand the problem first.

I prefer the idea of

(a) certainty.

(b) theory.

I remember best

(a) what I see.

(b) what I hear.

It is more important to me that an instructor

(a) lay out the material in clear sequential steps.

(b) give me an overall picture and relate the material to other subjects.

I prefer to study

(a) in a study group.

(b) alone.

I am more likely to be considered

(a) careful about the details of my work.

(b) creative about how to do my work.

When I get directions to a new place, I prefer

(a) a map.

(b) written instructions.

I learn

(a) at a fairly regular pace. If I study hard, I'll "get it."

(b) in fits and starts. I'll be totally confused and then suddenly it all "clicks."

I would rather first

(a) try things out.

(b) think about how I'm going to do it.

When I am reading for enjoyment, I like writers to

(a) clearly say what they mean.

(b) say things in creative, interesting ways.

When I see a diagram or sketch in class, I am most likely to remember

(a) the picture.

(b) what the instructor said about it.

When considering a body of information, I am more likely to

(a) focus on details and miss the big picture.

(b) try to understand the big picture before getting into the details.

I more easily remember

(a) something I have done.

(b) something I have thought a lot about.

When I have to perform a task, I prefer to

(a) master one way of doing it.

(b) come up with new ways of doing it.

When someone is showing me data, I prefer

(a) charts or graphs.

(b) text summarizing the results.

When writing a paper, I am more likely to

(a) work on (think about or write) the beginning of the paper and progress forward.

(b) work on (think about or write) different parts of the paper and then order them.

When I have to work on a group project, I first want to

(a) have "group brainstorming" where everyone contributes ideas.

(b) brainstorm individually and then come together as a group to compare ideas.

I consider it higher praise to call someone

(a) sensible.

(b) imaginative.

When I meet people at a party, I am more likely to remember

(a) what they looked like.

(b) what they said about themselves.

When I am learning a new subject, I prefer to

(a) stay focused on that subject, learning as much about it as I can.

(b) try to make connections between that subject and related subjects.

I am more likely to be considered

(a) outgoing.

(b) reserved.

I prefer courses that emphasize

(a) concrete material (facts, data).

(b) abstract material (concepts, theories).

For entertainment, I would rather

(a) watch television.

(b) read a book.

Some teachers start their lectures with an outline of what they will cover. Such outlines are

(a) somewhat helpful to me.

(b) very helpful to me.

The idea of doing homework in groups, with one grade for the entire group,

(a) appeals to me.

(b) does not appeal to me.

When I am doing long calculations,

(a) I tend to repeat all my steps and check my work carefully.

(b) I find checking my work tiresome and have to force myself to do it.

I tend to picture places I have been

(a) easily and fairly accurately.

(b) with difficulty and without much detail.

When solving problems in a group, I would be more likely to

(a) think of the steps in the solution process.

(b) think of possible consequences or applications of the solution in a wide range of areas.

Post-Test Survey

1. The instructor comments were:
   a. very useful b. useful c. not very useful d. not useful at all
2. The tone of the instructor's comments overall was:
   a. very positive b. positive c. negative d. very negative
3. The time required to review the comments in order to make a revision plan was:
   a. very time intensive b. time intensive c. short d. very short
4. The instructor comments' location (where they were placed) was:
   a. very usable b. usable c. not very usable d. not usable at all
5. A majority of the instructor comments were:
   a. very useful b. useful c. not very useful d. not useful at all
6. The amount of instructor commenting was:
   a. very adequate b. adequate c. not very adequate d. not adequate at all
7. The instructor comments will:
   a. greatly help in the next assignment
   b. help in the next assignment
   c. have no impact on the next assignment
   d. hurt in the next assignment
8. The instructor comments overall were:
   a. very satisfying b. satisfying c. not very satisfying d. not satisfying at all
9. Rank the instructor's comments on a scale of 1 (worst) to 10 (best)

   (Post-test survey question source: Still and Koerber [2010])

Appendix E

English 2311 Student Survey Participation by College, Department, and Major

College	Department	Major	*n*
Agricultural Sci. & Natural Resources	Agricultural & Applied Economics	Agricultural & Applied Econ.	1
Agricultural Sci. & Natural Resources	Agricultural & Applied Economics	General Business	1
Agricultural Sci. & Natural Resources	Animal & Food Sciences	Animal Science	1
Agricultural Sci. & Natural Resources	Landscape Architecture	Landscape Architecture	2
Arts & Sciences	Biological Sciences	Biology	1
Arts & Sciences	Economics	Economics	1
Arts & Sciences	Geosciences	Geosciences	2
Arts & Sciences	Kinesiology & Sport Management	Exercise & Sport Sciences	9
Arts & Sciences	Mathematics	Mathematics	2
Arts & Sciences	Philosophy	Philosophy	1
Arts & Sciences	Political Science	Political Science	1
Arts & Sciences	Psychological Sciences	Psychology	2
Arts & Sciences	Sociology, Anthropology & Social Work	Anthropology	1
Arts & Sciences	Sociology, Anthropology & Social Work	Sociology	1
Arts & Sciences	University Studies	Applied Arts & Science	1
Business Admin.	Marketing & Supply Chain Management	Marketing	1
Engineering	Chemical Engineering	Chemical Engineering	9
Engineering	Computer Science	Computer Science	3
Engineering	Mechanical Engineering	Mechanical Engineering	1
Human Sciences	Design	Interior Design	1
Human Sciences	Hospitality & Retail Management	Restaurant, Hotel, & Institutional Mgmt.	2
Human Sciences	Hospitality & Retail Management	Retail Mgmt.	2

Human Sciences	Human Sciences	Human Sciences	2
Human Sciences	Nutritional Sciences	Nutritional Sciences & Dietetics	2
Human Sciences	Personal Financial Planning	Personal Financial Planning	3
Human Sciences	Human Sciences	Human Dev. & Family Studies	3
Media & Comm.	Advertising	Advertising	1
Media & Comm.	Communication Studies	Communication Studies	3
		Total	60