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What LMS Site Statistics Tell Us About Timing Instructor Feedback on Student Writing

Angela Laflen

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Writing instructors spend considerable time responding to student writing with the expectation that students will use that feedback to improve their writing. However, a number of studies have questioned the extent to which students apply instructor feedback to improve their writing or transfer it to new writing situations. Timing of feedback and students' interest in feedback are frequently discussed in the literature on response as two factors that impact students' ability to apply and transfer response. In this article I consider the relationship between the two factors and whether students' behavior as they access feedback is related to when in the writing process feedback is provided. I report the results of a study using site statistics collected by a learning management system that compares students' rates of opening instructor feedback on preliminary drafts and final papers. I also examine whether students' rates of accessing feedback on preliminary drafts changed over the course of the semester from the first assignment to the final assignment. This study illustrates that the timing of instructor feedback significantly impacts students' behavior as they access feedback and suggests that instructors prioritize feedback on preliminary drafts to encourage students to apply and transfer feedback.

Keywords: response, feedback, timing, multiple-draft classroom, learning management systems (LMS), pedagogy

Introduction

Writing teachers spend a considerable amount of time providing formative feedback on student writing with the expectation that students will use that feedback to improve their writing—not only in a single assignment context but also in future, new writing contexts. However, student difficulties applying and transferring feedback to improve their writing are well documented (Bergmann & Zepernick, 2007; Haswell, 2006; Moore & Anson, 2016; Nelms & Dively, 2007; Sommers, 2006; Wardle, 2007; Yancey, Robertson, & Taczak, 2014). Two factors frequently identified as impacting students' abilities to apply and transfer feedback are (a) student interest in and engagement with feedback and (b) the timing of instructor feedback (Carless, 2006; Ferris, Liu, & Rabie, 2011; Gibbs, 2006; Laflen & Smith, 2017; Lee, 2009; Mulliner & Tucker, 2017; Rowe & Wood, 2007; Sadler, 2010; Yang & Carless, 2013). These factors have also been found to be linked: If feedback is provided “too late,” then students are less interested in it (Yang & Carless, 2013). As an example, Laflen and Smith (2017) reported that students were less likely to access instructor feedback on the last papers they wrote for a class than on the first papers they wrote. However, Laflen and Smith did not consider the impact of timing within the context of a single assignment and whether students might be more interested in feedback provided on preliminary drafts when, as Gooblar (2015) has expressed it, feedback “might actually be useful—while the students are still working on their assignments” (para. 8). To help instructors maximize the time they have to provide feedback to students about writing, we need more information about *how* timing issues impact student behaviors as they access feedback and *when* they are most likely to access it—during an assignment and during a semester.

In this article, I report the results of a study using site statistics collected by a learning management system (LMS) that compares students' rates of opening instructor feedback on preliminary drafts to results reported by Laflen and Smith (2017) in a study of students' behaviors as they accessed instructor feedback provided on final papers. I also examine whether students' rates of accessing feedback on preliminary drafts changed over the course of the semester from the first assignment to the final assignment. Data such as site statistics collected from LMSs provide

a direct record of student activity throughout a course. Because an LMS records each time a student accesses a feedback file in a course, it is possible to observe students' behavior without relying on their accurate self-reporting. As such, this study uses site statistics to provide a clearer picture of students' behaviors as they access instructor feedback. Though in this study I do not explicitly consider the extent to which students used the feedback they received on their writing, students must obviously first access feedback in order to apply or transfer it to improve their writing. As Laflen and Smith (2017) contend, "Access on its own may not be enough, but it is an essential precondition for effective response" (p. 51). This study can therefore help instructors decide how to most effectively time the feedback they provide to students.

Review of the Research

Providing formative feedback to students as a way to help them improve their writing is central to the role of writing teachers. It is also one of the most time-consuming parts of the job. For example, based on several studies in which instructors tracked their time, Haswell (2005) estimated that in first-year writing courses, instructors spend an average of 20 minutes reading and writing comments on a preliminary draft and another 20 minutes writing comments on a final paper. This means that an instructor can expect to spend 40 minutes reading and writing comments for every paper assignment in a course.

Why do writing teachers spend so much time on feedback? Though feedback serves numerous functions, including offering "advice for improvement of future assignments; explaining or justifying a grade . . . demonstrat[ing] characteristics, such as expertise, diligence or authority; and . . . fulfill[ing] a ritual which is part of academic life" (Carless, 2006, p. 220), primarily, writing teachers place a priority on response because of a belief in the potential for feedback to help writers improve. As Anson (2012) explained, "From a purely instructional perspective, no universally held belief about teaching writing stands with greater determination than the one that places response at the center of development" (p. 193). More recently, Busekrus (2018) argued that instructor feedback can play a key role in students' transfer of learning; she defined transfer in the context of

response as “the application, remixing, or integration’ of teacher feedback from one writing context to another” (p. 103).

However, a number of studies have questioned the extent to which students do apply instructor feedback to improve their writing or transfer it to new writing situations (Bergmann & Zepernick, 2007; Haswell, 2006; Knoblauch & Brannon, 2006; Moore & Anson, 2016; Nelms & Dively, 2007; Sommers, 2006; Wardle, 2007; Yancey et al., 2014). Referring to what they call the “myth of improvement,” Knoblauch and Brannon (2006) suggested that “the reassuring narrative about the improvement of writing ability belies a persistently unconvincing demonstration that it occurs” (p. 2). Though a wide variety of factors have been identified as impacting application and transfer of feedback, timing of feedback and students’ interest in and engagement with feedback are two factors frequently mentioned in studies of instructors’ perceptions of feedback (Carless, 2006; Ferris et al., 2011; Gibbs, 2006; Laflen & Smith, 2017; Lee, 2009; Mulliner & Tucker, 2017; Rowe & Wood, 2007; Sadler, 2010; Yang & Carless, 2013).

A number of studies have identified timing as a crucial element in students’ interest in and engagement with instructor feedback. Yang and Carless (2013) defined the structural dimension of feedback as “the timing, sequencing and modes of feedback, allied to resources for generating and providing feedback” (p. 290), and they concluded that “when feedback arrives too late, it is unlikely to be acted upon” (p. 291). Though some studies of the timing of feedback focus on the length of time students and instructors perceive is reasonable to wait for feedback on submitted papers (e.g., Mulliner & Tucker, 2017), other studies focus on the timing of feedback within the writing process (e.g., Ferris, 1995; Gooblar, 2015; Sommers, 2006). Since at least the early 1980s, composition scholars have recommended offering formative instructor feedback on preliminary drafts in order to encourage students to apply that feedback during the revision process (Ferris, 1995; Gooblar, 2015; Hillocks, 1986; Knoblauch & Brannon, 1981; Krashen, 1984; Prowse, Duncan, Hughes, & Burke, 2007).

As Ferris (1995) explained, students

seem to perceive of feedback differently in the context of multiple-draft assignments. . . . Because students must rethink and revise previously written essay drafts, they are more likely to pay close attention to their teachers' advice on how to do so than in a situation in which they are merely receiving a graded paper with comments and corrections to apply to a completely new essay assignment. (p. 36)

She concluded, “teacher feedback on preliminary drafts of student work may be more effective than responses to final drafts” (p. 48). Gooblar (2015) concurred, suggesting that it is better to prioritize feedback on drafts rather than on final papers, arguing that what he terms “feedforward” allows instructors to “conserve our time and energy and give students comments when they might actually be useful—while the students are still working on their assignments” (para. 8).

Researchers have also established that feedback on preliminary drafts tends to have more effect on student writing than responses to final papers do (Ferris, 2003; Sommers, 1982; Zamel, 1985). In particular, formative feedback provided on preliminary drafts has been found to be beneficial in improving students' revision skills and writing quality (Fallahi, Wood, Austad, & Fallahi, 2006; Johnstone, Ashbaugh, & Warfield, 2002) and helping students to cultivate skills in tailoring their writing for a specific audience (Goddard, 2003; Johnson, Tuskenis, Howell, & Jaroszewski, 2011; Stellmack, Keenan, Sandidge, Sippl, & Konheim-Kalkstein, 2012). For example, Stellmack et. al (2012) found that over half of students' research method papers displayed increases in quality from first to second drafts when graded by a third party not associated with the course. They concluded that a review-revise-resubmit process “gives students practice in responding to the specific concerns of the original grader” (p. 244). A number of studies of L2 students have reported similar results. Berger (1991) found that L2 students were better able to revise effectively when they received teacher feedback on preliminary drafts, and Fathman & Whalley (1990) found that students' revisions improved in overall quality and in linguistic accuracy when the students received comments and/or corrections on both the content and form of their preliminary drafts.

Nevertheless, despite indications that student writing improves when students use instructor feedback to revise their preliminary drafts, it is not clear whether they are more interested in and likely to access instructor feedback provided on preliminary drafts or on final papers. Student interest in feedback is often identified in the literature as another factor that impacts the application and transfer of instructor response. Studies of instructor perceptions of response frequently report that instructors question whether students read their feedback (e.g., Carless, 2006; Ferris, 1995; Lee, 2009; Leki, 1990; Mulliner & Tucker, 2017). As Carless (2006) explained, despite the amount of time instructors devote to providing feedback, many share the belief that students are not interested in that feedback (p. 220). As an example, in Ferris et al.'s (2011) study of instructor perceptions of feedback “over one-third [of respondents] felt that the potential of response to help students was limited because students do not ‘pay adequate attention to it’” (p. 47). Similarly, a 2017 study by Mulliner and Tucker found that only 38% of instructors agreed that students always “access marked assignments” (p. 277). Taken together, these studies indicate that some instructors feel that lack of student interest in feedback is to blame when students fail to improve their writing after receiving feedback.

However, studies of students' perceptions of their own interest in instructor feedback present a completely different picture of student interest in feedback. Indeed, students report generally very high levels of interest in and engagement with instructor feedback on their writing (Chokwe, 2015; Higgins, Hartley, & Skelton, 2002; Mulliner & Tucker, 2017; Rowe & Wood, 2007; Sommers, 2006; Weaver, 2006). For example, Weaver concluded from her research that “students wholeheartedly recognise the value of feedback in improving their learning” (p. 390), and Mulliner and Tucker reported that 96% of students agreed that they “always access marked assignments” (p. 277). In studies of student perceptions, the limitations of feedback to help students improve are frequently attributed to feedback that is inadequate—because it is late, confusing, or vague (e.g., Rowe & Wood, 2007; Sommers, 2006; Weaver, 2006). Students in Weaver's study were left “feel[ing] short-changed, and understandably upset” by feedback that was “too vague or general to be of use” (p. 8). Rowe and Wood found that “a common cause of student dissatisfaction” was “receiving late and minimal

feedback” (para. 19). Haswell (2006) summarized a number of studies of student perceptions as follows:

Students are avid for commentary (though they may first look at the grade), but when forced to explain their teachers’ comments, they misinterpret a shocking portion of it. . . . Some of the blame rests on teachers, who often think they are positively emphasizing central qualities such as reasoning, genre form, and reader awareness while in fact the bulk of their commentary dwells negatively on surface mistakes and infelicities of syntax and word choice. (p. 7)

Together, these studies depict students as not only interested in, but eager for and deeply engaged with, instructor feedback, which they often find disappointing and difficult to apply to improve their writing.

The pictures of student interest in instructor feedback emerging from studies of instructor and student perceptions differ so significantly as to warrant further study. One specific question to explore is, does student interest in instructor feedback vary depending on when in the context of an assignment or a semester it is provided? To get a clearer picture, we need a way of observing students’ behaviors as they access instructor feedback. Using data gathered by site statistics tools in LMSs, we can begin to identify patterns in students’ behaviors as they access instructor feedback. Laflen and Smith (2017) described this method in a study that examined students’ behaviors as they accessed instructor feedback on final papers, which were defined as papers that had already been revised following feedback on a preliminary draft, were being submitted for grading, and could not be revised further to improve the grade. Laflen and Smith compared two different response modes—Mode 1, in which they used the grade box and attached a feedback file, and Mode 2, in which they disabled the grade box and returned the student’s grade only in the feedback file, similarly to how grades are usually returned on hard copy papers (see Figure 1).

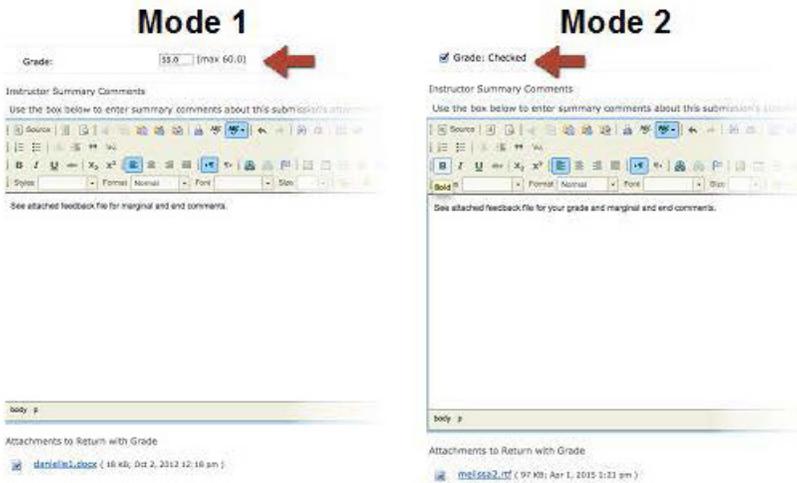


Figure 1. Examples of LMS user interfaces for returning papers to students. In Mode 1 (left), the paper grade is presented in the grade box; students are not required to access the feedback document to learn their grade. In Mode 2 (right), the grade is given only in the feedback document. From “Responding to student writing online: Tracking student interactions with instructor feedback in a Learning Management System,” by A. Laflen and M. Smith, 2017, *Assessing Writing* 31, p. 45, Figures 3 and 4. Copyright 2016 by Elsevier Inc. Adapted with permission.

They found that students were much more likely to access instructor feedback when they could not see their grade separately. When students were able to view their grade on a paper without accessing instructor feedback attachments, only 55.2% of them chose to open the attachments. However, when students had to open the feedback attachment to see their grade, the percent rose to 88.6 (see Figure 2).

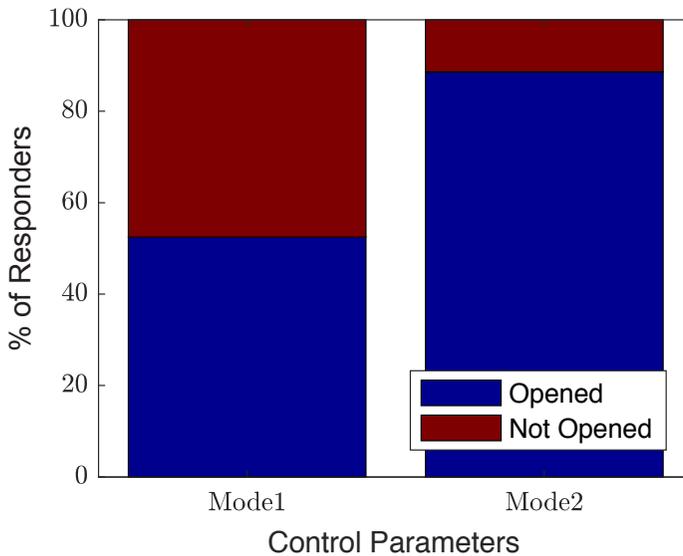


Figure 2. Percentages of students who opened or did not open feedback attachments by mean response rate for mode. These panels visually represent the effect of the study factor on the mean response rate. Modes are listed along the horizontal axis, and the vertical axis is the percentage of the study population. The population is graphed as a stacked bar chart so that the shift in rate is easily visible. From “Responding to student writing online: Tracking student interactions with instructor feedback in a Learning Management System,” by A. Laflen and M. Smith, 2017, *Assessing Writing* 31, p. 48, Figure 6.a. Copyright 2016 by Elsevier Inc. Reproduced with permission.

In Laflen and Smith’s (2017) study, then, students exhibited far less interest in instructor feedback than the students in Mulliner and Tucker’s (2017) study, 96% of whom reported always accessing feedback—though the numbers given by the students were significantly higher than the 38% of faculty who always agreed with that statement.

Laflen and Smith (2017) also found that students’ rates of accessing instructor feedback files dropped considerably from the first paper of the semester to the last paper. They reported that students were approximately

24% more likely to open feedback files for the first paper (82.5%) than the last paper (58.1%). See Figure 3 for these results.

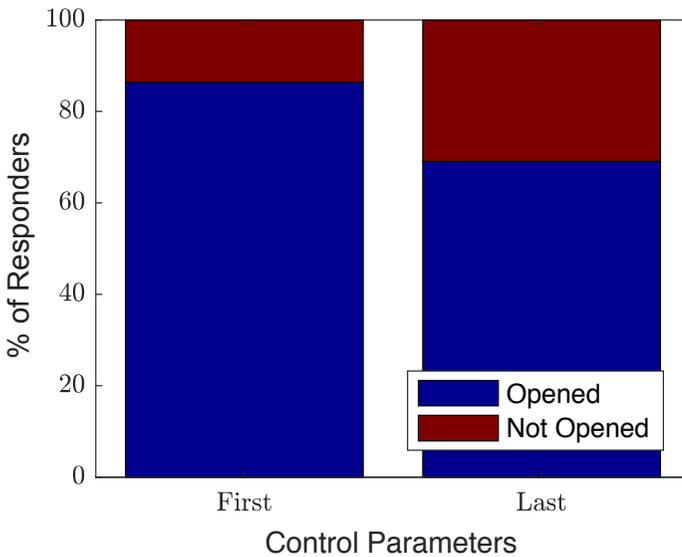


Figure 3. Percentages of students who opened or did not open feedback attachments by mean response rate for paper sequence within the semester. From “Responding to student writing online: Tracking student interactions with instructor feedback in a Learning Management System,” by A. Laflen and M. Smith, 2017, *Assessing Writing* 31, p. 48, Figure 6.b. Copyright 2016 by Elsevier Inc. Reproduced with permission.

Significantly, as Laflen and Smith pointed out, “we did not have a 100 percent rate of opening feedback files in either mode 1 or mode 2. Thus, a small percentage of students appear uninterested in instructor response altogether—including *both* their grade as well as instructor feedback” (p. 49). In Laflen and Smith’s study, a certain percentage of students were not interested in instructor feedback at the stage of a final paper, raising the question of whether a higher percentage of students would be interested in instructor feedback provided earlier in the writing process—on preliminary drafts, when instructor comments “might actually be useful” (Gooblar, 2015, para. 8).

In the current study, I seek to provide a clearer picture of students' behaviors as they access instructor feedback on preliminary drafts. Specifically, I examine the question of whether students are more likely to access instructor feedback on preliminary drafts (referred to as Mode D in this study) or graded papers (Mode 1 or Mode 2 in Laflen and Smith's [2017] study). Mode D resembles Mode 2, in that feedback attachments were provided to students via the course assignments tool without any numeric score (see Figure 1, right). Also, I examine whether student interest in instructor feedback is retained at a consistent level throughout the duration of the semester. The current study replicates and extends Laflen and Smith's (2017) study of students' behaviors as they access instructor feedback on graded papers in order to determine whether students are more likely to access instructor feedback if it is provided earlier in the writing process.

In this study, I have considered the following research questions:

1. Does the rate at which students open attachments with instructor feedback increase if the feedback is provided on a preliminary draft that the student has the chance to revise versus on a final paper?
2. How does sequencing in the semester affect the rate at which students open attachments with instructor feedback on their preliminary drafts?

To address these research questions, I performed a retrospective analysis of data captured by an LMS site statistics tool that provides a picture of students' actual practices accessing instructor feedback files in undergraduate courses.¹

¹ This study was conducted at Marist College and was determined to be IRB exempt by Marist College's IRB director because the data included were captured automatically by an LMS during the course of normal educational activities. Additionally, personal and course data were anonymized prior to analysis.

Methods

Context and Participants

Though Laflen and Smith's (2017) study found that the timing of feedback on graded papers within the context of a semester significantly affected whether students would access instructor feedback, their study did not consider whether students are more likely to access instructor feedback provided on preliminary drafts compared with graded drafts. The current study explores timing in the context of the writing process more directly because it is important for instructors to have information about when students are most likely to access instructor feedback so they can effectively time the formative feedback they present.

In order to make a direct comparison to Laflen and Smith's (2017) results, I closely followed the procedure they described to retrospectively analyze a subset of courses. My study was conducted at a medium, comprehensive private college that encourages the use of the college's LMS as a supplemental tool in web-facilitated courses and online courses. For the study, I selected eight courses that I taught between 2011 and 2016. All of the courses were writing courses; three of them were nonmajor courses offered within the liberal arts core, and five of them were major courses. These courses met face-to-face, and the college's LMS—an instance of Sakai called iLearn—was used for response. Multiple papers were assigned in each course. There were 138 undergraduate students among these courses. The gender ratio was approximately 70% female and 30% male. See Table 1 for demographic data on the research population.

Table 1
Demographic Data on the Research Population

	Gender		Level	
	Female	Male	Core	Major
Mode Draft	96	42	57	81

Note. I use the term **Mode Draft** to refer to the group of preliminary drafts that were included in this study.

Data Sources and Analysis

In each of the eight courses included in the study, I collected and returned three to five preliminary drafts online with formative instructor feedback. Submission of drafts was a required course activity that carried participation credit for the course. Students submitted each paper as a preliminary draft at approximately the midpoint in the composing process (in other words, students had time to use the feedback they received to revise before submitting their final paper). The assignments asked students to submit the best and most complete preliminary drafts possible, for example, with complete citations.

Once submitted for grading, the papers counted for between 10% and 25% of the students' course grade, but I did not grade the drafts themselves, nor did I predict in my feedback what grade they were likely to receive. The genre of the papers varied depending on the course and ranged from academic research essays to nonfiction personal essays to technical reports. The formative feedback provided included marginal feedback and an end comment for each draft that focused on both higher order concerns, such as focus, organization, development, and genre issues, and lower order concerns, such as grammar and formatting issues. This feedback parallels the formative feedback Laflen and Smith (2017) provided on final papers in their study (p. 46). Though there has been considerable disagreement in the published literature about whether instructors should focus on content or form in feedback on drafts, I used the "pattern of mixed form and content feedback" described by Ashwell (2000, p. 232). Though I identified patterns of error, I did not focus on written errors, use error codes, or mark errors comprehensively. I commented on every draft submitted regardless of whether it was complete. Students were encouraged to use the feedback as they revised their papers, and in class I provided a handout and information on how and why to access feedback, but the students were not formally required to do so.

Following the procedure of Laflen and Smith (2017), I retrieved data for each draft written by each student in each course, showing the number of times a student opened each feedback attachment. Altogether, I collected more than 1,000 data points. In order to compare my data to Laflen and Smith's, I consolidated the first and last papers, which "helped provide

consistency across course sections, which varied in the numbers of papers collected and returned online” (Laflen & Smith, 2017, p. 46).

Laflen and Smith (2017) examined rates of accessing instructor feedback on graded drafts and explored the impact of four factors that might influence the rate at which students opened feedback attachments: timing within the semester, gender, course level, and delivery mode (online or face-to-face). In the current study, I focused only on the factor of timing to better understand this important dimension of feedback.

I statistically determined whether each factor impacted the rate within a 99% confidence interval. If the confidence intervals among the distributions related to different categories of a factor did not overlap, then I considered that factor as having a statistically significant impact on students’ response rate. To assess the impact of each factor, I looked at the shift in mean response rate. This allowed me to directly compare my results to Laflen and Smith’s (2017) study.

Findings

Rates of Accessing Feedback on Preliminary Drafts Versus Final Papers

My most important finding is that students were significantly more likely to open feedback attachments provided on a preliminary draft (Mode D) compared with the rates Laflen and Smith (2017) reported for students accessing feedback on final papers (Modes 1 and 2). Students were 8.2% more likely on average to open the feedback attachment provided on a draft (Mode D) than they were when they had to open the feedback attachment to view their grade on a final paper (Mode 2), and students were 44.3% more likely on average to open the feedback attachment than they were when they could see their grade apart from the feedback (Mode 1). While in Laflen and Smith’s study, Mode 1 had a mean response rate of 52.5% overall, and Mode 2 had a mean response rate of 88.6% overall, in the current study, Mode D (for draft) had a mean response rate of 96.8% (see Figure 4). Further, Mode D had a clearly separated confidence interval from Modes 1 and 2 previously reported by Laflen and Smith and therefore had a statistically significant impact (see Figure 4).

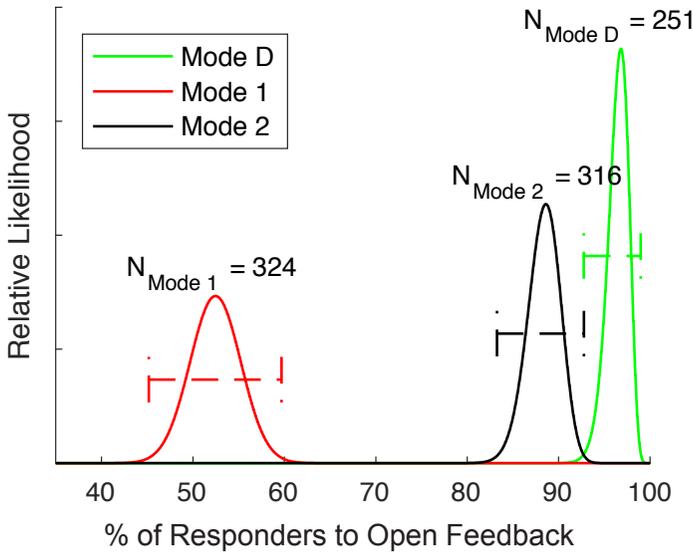


Figure 4. Distribution and confidence interval for mode. Horizontal axis depicts the possible rate of population opening an attachment. Vertical axis is relative likelihood. In each subplot, the curves represent the distribution of the rate of students opening the attachment, with 99% confidence intervals depicted as dashed lines. Data for Modes 1 and 2 from “Responding to student writing online: Tracking student interactions with instructor feedback in a Learning Management System,” by A. Laflen and M. Smith, 2017, *Assessing Writing* 31, p. 47. Copyright 2016 by Elsevier Inc. Used with permission.

These results suggest that the timing of instructor feedback makes a clear difference to the rate at which students open feedback attachments. When students have the chance to use feedback to improve their writing and grade on an assignment, they are much more likely to access that feedback.

Rates of Accessing Feedback on Preliminary Drafts Throughout the Semester

Another significant finding is that students continued accessing feedback on their preliminary drafts at a high rate throughout the semester. In the current study, the first paper of the semester had an average access rate of 96.1%, and the last paper of the semester had a 97.6% average access rate. The difference between these two rates was not statistically significant, indicating that student accessing of feedback remained essentially constant throughout the semester (see Figure 5).

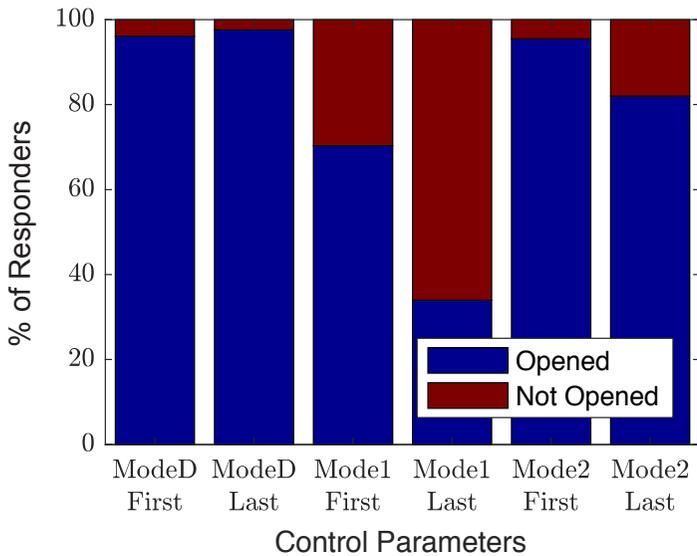


Figure 5. Percentages of students who opened or did not open feedback attachments by mean response rate for paper timing within the semester, comparing Mode D with Modes 1 and 2. Data for Modes 1 and 2 from “Responding to student writing online: Tracking student interactions with instructor feedback in a Learning Management System,” by A. Laf-len and M. Smith, 2017, *Assessing Writing* 31, p. 48. Copyright 2016 by Elsevier Inc. Used with permission.

In contrast, Laflen and Smith (2017) reported that students accessed feedback on last final papers much less than they accessed feedback on first final papers; students were approximately 24% more likely to open feedback files for the first paper (82.5%; Modes 1 and 2 combined) than they were for the last paper (58.1%; Modes 1 and 2 combined). These data illustrate student priorities. The students in Laflen and Smith's study exhibited far less interest in feedback on the final paper of a course compared with the students in the current study, who could still revise a preliminary draft based on feedback to improve their writing and grade in the context of a single assignment.

Implications

Summary of Findings

Overall, the findings from this study strongly support the importance of providing formative instructor feedback on preliminary drafts. This study indicates that students are significantly more likely to access instructor feedback on their drafts in contrast to final papers. Students are more likely to access feedback on drafts than they are to access even feedback files that include their grades on final papers. The rate of opening feedback on preliminary drafts also remained constant throughout the semester, indicating that students remain interested in feedback on their preliminary drafts, likely because of their immediate focus on improving their writing and grade on the assignment and in the course.

Implications for Practice

This study has implications related to students' interest in instructor feedback, timing of instructor feedback, and methods of studying students' behaviors as they access feedback. First, it provides useful information to contextualize students' interest in instructor feedback. Researchers who study student perceptions of their interest in instructor feedback do not always distinguish between feedback provided on preliminary drafts or final papers when they ask students to rate their interest in feedback. As a result, it is not always clear how to interpret the high levels of interest in feedback that students express, and this interest is sometimes explicitly or implicitly called into question in studies of instructors' perceptions of

student interest. Laflen and Smith's (2017) study indicates that in the case of feedback on final papers, students are far less likely to access feedback than was suggested in studies of student perceptions of their own interest. However, the ~97% of students who accessed feedback on preliminary drafts in the current study corresponds very closely to the 96% of students in Mulliner and Tucker's (2017) study who agreed that they always access marked assignments. It may be that students perceive of the value of feedback provided on preliminary drafts differently than they perceive the value of feedback on final papers; this is worth studying further. These data also indicate that, at least in the case of feedback on preliminary drafts, students more accurately describe their level of interest in feedback than instructors do. This discrepancy suggests that if students fail to act on instructor feedback provided on preliminary drafts, instructors should consider other factors that might be impacting students' ability to apply feedback rather than focusing on whether students did or did not access the feedback. In studies of student perceptions of instructor feedback, students report a wide range of obstacles to understanding and using instructor feedback, and we should take seriously, as Sommers (2006) has asserted, what these students, "who, through voice, expertise, and years of being responded to" (p. 248), can teach instructors about how to improve response practices.

Second, this study confirms the importance of providing formative instructor feedback on preliminary drafts. One reason for the efficacy of feedback provided on preliminary drafts might be that students are more likely to access it. This study indicates that students are significantly more likely to access feedback provided on preliminary drafts than on final papers and that they retain a high level of interest in instructor feedback on preliminary drafts throughout the semester. Student interest in feedback on preliminary drafts warrants building time into course schedules for students to submit drafts and for instructors to provide feedback on those drafts.

In terms of how much time is needed to facilitate instructor feedback on preliminary drafts, Gooblar (2015) offers the following advice:

Have students turn in a first draft at least a week before the final version is due. Leave yourself enough time so that you can return their marked-up drafts with at least three or four days still to go before the final due date. (para. 9)

Personally, I have found that I am able to write comments on preliminary drafts much more quickly than on graded papers, perhaps because I engage the writing more directly rather than focusing on evaluating the paper or justifying a grade. Even so, instructors should plan ahead so they can spend at least 20 minutes reading and writing comments on each student draft. In my writing courses, this has meant that I have had to cut a paper from the course; for example, instead of writing five essays throughout the semester, students in my introductory writing course now write four essays so we have more time for response and revision activities.

Third, this study demonstrates the value of using data collected by site statistics tools to observe students' behaviors as they access instructor feedback. Students have long described their interest in instructor feedback as being significantly higher than have instructors who were asked to rate student interest, but it has been difficult to confirm that students really are interested in formative feedback provided on preliminary drafts and to determine how much student interest or feedback timing factors into students' application of feedback. Site statistics allow us to observe students' behaviors, and, in the case of the current study, to identify a difference in the way that students behave with regard to feedback on preliminary drafts versus final papers. The ability to study and monitor students' behaviors as they access instructor feedback is also a benefit to moving instructor response online, in addition to other benefits of electronic response that have been described by Ferris et al. (2011) and Haswell (2006), such as helping instructors more efficiently and speedily add feedback to student papers.

If feedback is provided on preliminary drafts and students fail to apply that feedback, instructors can use site statistics tools to ensure that students are actually accessing the feedback. If they are not, instructors

can take steps to facilitate students' engagement with feedback, such as by building time into class to look at feedback, scheduling conferences with individual students as needed, or using talk-back strategies in which students respond in writing to the feedback they have received. However, if students are accessing feedback yet still struggle to apply it to improve their writing, instructors can consider other possible obstacles to students' efforts to apply feedback, including misunderstanding the feedback or feeling discouraged or overwhelmed by it, and take steps to adapt feedback practices as needed.

Future Research

This study was limited by size, as it included only 138 students and eight courses that were taught by a single instructor from a single institution. However, this kind of retrospective analysis of student data is easy to replicate and could be usefully employed to get a fuller picture of students' actual practices in accessing instructor feedback. In particular, it would be useful to know whether the same factors that proved significant in the current study are generalizable to a larger sample and in different higher education contexts. It could also be useful to expand this study to add student interviews and surveys to compare students' perceptions of their behaviors with observed patterns. In particular, it would be valuable to explore students' perceptions of the differences between instructor feedback provided on preliminary drafts versus that provided on final papers to better understand the types of feedback students find most useful at these different points in the writing process.

Future work might also consider the impact of grades (course grades, grades on individual assignments, or GPA) on students' behaviors as they access instructor feedback. The size of the current study made it impossible to determine the impact of grades. However, it would be worth considering this question in the future with a larger population of students to determine if the students most in need of instructor feedback on their preliminary drafts are more or less likely to access that feedback compared with higher performing students.

Closing Thoughts

The primary takeaway from this study is that when it comes to student interest in instructor feedback, timing matters. Though scholarship has long recommended that students benefit more from instructor feedback on preliminary drafts than on final papers, it has been unclear whether students themselves are more interested in feedback provided on preliminary drafts than in feedback on final papers, and instructors' and students' perceptions of student interest in feedback diverge so widely that additional study is warranted. With the help of site statistics, we can observe students' behaviors as they access feedback so we can better understand factors that influence student behaviors. The timing of feedback in the writing process proves to be a significant factor to students' interest in instructor feedback. Students in the current study not only were significantly more likely to access feedback provided on preliminary drafts but also retained a high level of interest on preliminary drafts over the course of the semester. Consequently, instructors can maximize the time they have to respond to student writing by focusing the majority of formative feedback on preliminary drafts and minimizing, if necessary, feedback on final papers. Additionally, if feedback is provided at the optimal time during revision and students fail to apply that feedback, instructors should consider other factors that students and researchers have identified as obstacles to students' efforts to apply and transfer instructor feedback. As instructors continually strive to give the most meaningful, useful feedback to students to help them improve their writing, data provided by site statistics tools can aid instructors in their efforts to understand what factors impact student behaviors and to refine response practices so that they foster application and transfer of feedback.

In "Across the Drafts," Sommers (2006) reflected on the practice of writing feedback, observing that

the work of entering our students' minds and composing humane, thoughtful, even inspiring responses is serious business. Given the enormous amount of time it takes to comment fairly upon a single paper, let alone twenty or thirty, we often wonder whether our students actually read our comments, and what, if anything, they take from them." (p. 248)

Though the current study did not consider “what, if anything” students took from instructor comments, it does illustrate that students have a lot to teach instructors about *when* they are most interested in receiving feedback they will actually access.

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