Student Perceptions of Writing Instruction: Twitter as a Tool for Pedagogical Growth

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While movements such as WAC and WID provide marvelous ideas for writing in the disciplines, student voices also have much to tell us.
(Hass & Osborn, 2007, p. 11)

Introduction and Literature Review

The implementation of writing across the curriculum (WAC) programs has become a well-established approach. While facilitating student learning through writing and learning to write in the disciplines remains the central focus (McLeod & Maimon, 2000), determining the most effective curricular structure and pedagogical practices for achieving these goals continues to require further research.

With this goal in mind, we suggest that listening to students who organically discuss their learning is a powerful strategy for improving pedagogy in WAC and writing courses in general. Colleges and universities utilize a variety of tools, typically surveys and questionnaires, to measure student perceptions of courses, instructors, textbooks, learning outcomes, and other aspects of higher education in order to create better courses, teaching methods, and overall experiences for students. While the necessity for and significance of these tools are not in question, additional information from a source used voluntarily by students throughout the semester could be useful.

This opportunity to uncover more detailed information about student experiences is possible through an analysis of student tweets. The uniquely public nature of Twitter offers the potential to view students' frustrations, proud moments, problems, and other thoughts. Therefore, our study utilizes public tweets, which we define as independently-authored and organic and not associated with any particular location, institution type, discipline, course level or other identifying or descriptive information. Through this method of listening to students, the (in)effectiveness of writing pedagogy is illuminated and best practices can be identified. While this aim is applicable to any course that incorporates writing, we focus primarily on implications for WAC programs in which writing is taught by non-writing-specialists in technical disciplines.

While a number of previous studies have measured the effectiveness of writing instruction based on student voices, few have approached student perceptions in the way we propose. Perhaps most often, student surveys, interviews, and/or focus groups are utilized. Michael Hass and Jan Osborn (2007), for example,

surveyed 71 students in five courses in order to explore perspectives on writing. Their study resulted in five dominant "themes" for instructors to consider as they design writing assignments: "engagement, commitment, collaboration, a systemic approach, and opportunities for external confirmation" (p. 9). Specific to a WAC program, Naelys Luna, E. Gail Horton, and Jeffrey R. Galin (2014) surveyed undergraduates enrolled in a social work program. They found that pedagogical strategies, such as multiple revisions, peer review, and instructor feedback, were especially effective (p. 401).

While we do not wish to diminish these important research methods, we are interested in the potential limitations of these tools. Writing in 2015, Anne Ruggles Gere, Sarah C. Swofford, Naomi Silver, and Melody Pugh highlight two important factors. First, surveys, focus groups, interviews and similar research methods can affect responses: "as a team of researchers, we represented the institutional entity funding the research, and therefore the responses we received were likely shaped by our participants' awareness of our affiliations with Sweetland, which oversees the ULWR" (p. 250). Second, the aforementioned methods are somewhat limited in scope: "we are not able to speak to what actually happens in the ULWR classroom. Instead, we speak to how students, faculty, and GSIs conceptualize their activities" (p. 250). While the implications of this study are certainly not diminished by these relatively minor limitations, our focus on public tweets provides some insight into the perceptions of students who are engaged in writing but diminishes the potential influence of audience(s) affiliated with their institution. In addition, the tweets seemed to be posted, most often, in the moment and voluntarily, which not only diminishes the potential issues with recall (see Luna, Horton, & Galin, 2014, for example) as opposed to end-of-semester surveys but also offers some insight into what actually happens in classrooms and during the students' writing processes.

While many studies have explored Twitter as a subject of research, most focus on the website's pedagogical implications and possibilities rather than the nature of public, voluntary tweets that are not associated with a particular course. These studies have shown that Twitter is useful in helping students engage with course material and reading assignments (Park, 2013), reinforcing concepts discussed in class (Lomicka & Lord, 2012), and in providing a medium for students to communicate with one another as well as the instructor (Johnson, 2011; Davis & Yin, 2013). The tweets discussed in these and many other studies focus on the pedagogical implications of the Twitter site as a means of communication, engagement, and reinforcement. While this is an important endeavor, public tweets not associated with a class requirement also offer a great deal of insight.

In their study on student tweets, Xin Chen, Mihaela Vorvoreanu, and Krishna Madhavan (2014) focused on public tweets of engineering students. These students used Twitter to discuss problems and frustrations associated with their area of study by tagging their tweets with #engineeringProblems. This study holds significant value as one of the first to utilize "informal social media data" or,

what we have labeled public tweets, as data to learn about student perceptions regarding pedagogical practices. The authors discovered several themes from the tweets: heavy study load, lack of social engagement, negative emotion, sleep problems, comments on diversity, and others, which indicate a number of issues encountered by students. While this study focused on only engineering students and only problems due to the negative nature of the hashtag, our interest is in discovering both negative and positive attitudes about writing. Our study, therefore, utilized a keyword search that identified tweets for our purposes rather than a hashtag.

With the ideas of listening to student voices and considering their perspectives about the instructor's "role in writing assignment design" in mind, we formulated this study as an exploratory inquiry into the complexities of how instructors and their pedagogies might influence students' perspectives on writing assignments. In an effort to "[discover] what students themselves believe constitutes good writing and which pedagogical choices they perceive as most helpful to them in producing high quality written assignments" (Hass & Osborn, 2007, pp. 1-2), our study focused on the following questions: What do students say about their professors and their writing assignments in public tweets? Based on these perceptions, can we identify beneficial pedagogical practices and/or pedagogical practices that could be improved?

Research Design and Methodology

Designing this study as an analysis of tweets was a conscious and careful decision that best fit the purpose of the research as Twitter is often used as a way to publicly post thoughts and is available to anyone. Two notes about this claim should be noted. Firstly, Twitter does allow tweets to be private, if a user selects those privacy settings. Secondly, many scholars suggest that researchers still be extra sensitive and consider ethical implications when collecting social media (Fiesler & Proferes, 2018; Hibbin, Samuel, & Derrick, 2018; McKee & Porter, 2008; Zimmer, 2010). These ethical considerations will be explored in the following section.

In order to fully and fairly investigate the research questions, we employed grounded theory because it offers a blueprint for the systematic analysis of large amounts of data, as we describe in later sections. Louis Cohen, Lawrence Manion, and Keith Morrison (2011) argue that grounded theory allows the theory to emerge from the data as a consequence of systematic data collection and analysis rather than a set of predefined categories to be tested. Rather than, for example, searching tweets for themes in student surveys, grounded theory allowed us to consider the full meaning of each tweet and preserve student voices. Our goal was not to place these tweets within our current concepts of student perspectives but to consider that students may have more to say.

Participants and Ethical Considerations

Information concerning participant data such as gender, sex, age, race, year in school, area of study, and other information was not collected. Because this information is difficult to gather via Twitter, these demographics were not functions within our analysis. Therefore, the data discussed involves only the text and visuals in the tweets.

In collecting data, we carefully considered the ethical implications of studying personal posts. To maintain the integrity of the study, we employed Heidi McKee and James Porter's (2008) heuristic for internet-based research which categorizes these considerations based on the public or private nature of the site, use of identifiable data, interaction with participants, topic sensitivity, and subject vulnerability in order to determine whether informed consent is necessary. Most of these questions were answered by the nature of Twitter and the design of this study which involved no interaction with Twitter users. As a platform that is open to anyone with access to the internet, Twitter was created with the goal of helping users gain a large number of followers, retweets, and likes. Because users are aware tweets are public, we determined that informed consent was not necessary. All tweets were collected using Twitter's search feature that only displays public posts. However, even though the tweets were public, we strove to maintain anonymity by removing any personal or key identifiers (name, location, etc.) as we coded. Because we did not collect personal information and because Twitter is a public website, we believe that our data collection practices align with the ethical standards described by Michael Zimmer (2010), who discusses research using personal information collected from Facebook, as well as by Casey Fiesler and Nicholas Proferes (2018), who discuss research ethics on Twitter. As suggested by these and other scholars, we have avoided mining profiles for personal information, anonymized tweets, eliminated identifying information, and avoided sharing sensitive information with others. Additionally, as suggested by Hibbin, Samuel, and Derrick (2018), we have tried to look at "the qualitative nature of risk within individual [tweets] to protect participants" (p. 9) while still facilitating research and have only quoted tweets when absolutely necessary for discussion purposes.

Data Collection

To collect tweets relevant to the research questions, the keywords *writing, essay,* and *professor* were selected as search terms to ensure that data would likely be focused on college-level students (professor)[1] who were involved in the writing process (writing) of a formal assignment required by an instructor (essay). Although genre, assignment type, course, level, and more were not always clear, students who were tweeting with all three of these keywords seemed to be

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[1] The authors are aware that some secondary schools may use the term "professor" but suggest that most of the tweets were likely written by college students.

engaged in a writing project that would be graded by an instructor. Additionally, all three of these search terms were necessary in order to create a data set that fit the aim of the study. For example, initial searches using only *writing* and *professor* resulted in tweets about writing emails to professors, writing evaluations of professors, creative writing, and, among many others, choosing a major that requires large amounts of writing. Adding *essay* as a keyword helped locate tweets focused on formal writing assignments (i.e. not journal entries, discussion-board posts, etc.). Specific genres were not typically clear; however, our goal of identifying pedagogical practices does not rely on specific genres: our focus is any formal writing assignment. While these keywords certainly do not provide a perfect dataset, as we can only assume these are tweets from students, they returned a collection of tweets indicating that a student-author was engaged in required writing for a professor and tweeted about it organically.

The keywords were then input into Twitter's search tool, which responds to Boolean logic (professor AND writing AND essay) and provides a list of tweets that include at least one instance of all keywords. Tweets that included all three keywords were viewed in chronological order. We narrowed our search from January 1, 2017, through April 30, 2017. From this list, tweets not posted by students, such as those from professional organizations (writing centers, homework services, etc.) were eliminated. Additionally, tweets that were connected to a particular class, usually identified by the use of a hashtag, were considered scholarly and non-public and were not included. Thus, only public, organic tweets from the selected time period were included.

Tweets were then placed into a spreadsheet. The text of the tweet, emojis, and any attached media (gifs, images, videos, etc.), along with design elements such as bolded, capitalized, or italicized words were preserved in order to identify sarcasm, anger, etc. Usernames/ID were not incorporated into the spreadsheet as identifying information was not pertinent to our study.

Data Analysis

The process of coding was multifaceted and recursive, as is expected with grounded theory (Birks & Mills, 2015; Charmaz, 2014; Glaser & Strauss, 1999). In the following sections, we discuss our use of open coding, attitudinal coding, and writing process coding. During this process, we first coded items individually and then discussed and adjusted our codes as we reflected on the data and in order to reach 100% interrater reliability. These conversations were vital--especially when examining how humor/sarcasm and/or media such as gifs and emojis were used in the tweets.

Open Coding

Initial data collection resulted in 306 tweets of which 19 were excluded during the coding process for one of three reasons:

- Tweet's meaning impossible to decipher,
- Tweet focused solely on hearsay from a classmate or friend, or
- Tweet posted by professor rather than student.

The remaining 287 tweets were labeled with approximately 512 unique codes during the open-coding process. The most common codes were "Professor says" and "Student says," which were associated with a specified indication of communication. Other codes such as "Feedback," "Grades," and "Comments," for example, were used when the tweet indicated the professor had reviewed the student's writing. Table 1 provides a sample from the open coding process.

I had to Google the meaning of several words in my professor's feedback to my final essay. In her words, my writing is "too colloquial."	Professor says Final essay Feedback - Student needs definitions Comments on style
Y'all I'm gonna cry, I busted my ass writing this essay and my professor told everyone we can turn it in after spring break	Crying Hard work Due date changed Break
Me when my Writing Across Curriculum professor reminds us of the 2 page essay we have to write during the break. (gif of man disappearing)	Professor description Length Reminder Break

Table 1: Open Coding Table

Attitudinal Coding

Following open coding, the tweets were analyzed based on attitude (POSITIVE or NEGATIVE) in order to determine students' perceptions and reactions to specific issues raised in the tweets. Attitude was determined by the tone, content or point being made, and media. As with the open coding process, we discussed each of our codes to reach consensus about the holistic meaning of each tweet.

The process of attaching even the broad terms "POSITIVE" and "NEGATIVE" proved difficult, which is why we avoided using more specific language. Chen, Vorvoreanu, and Madhaven (2014) used a similar method in analyzing engineering students' tweets. Social media data mining has been used to learn more about student perceptions in the past (Patil & Kulkarni, 2018; Beth Dietz-Uhler & Janet E. Hurn, 2013; Shen & Kuo, 2015), but as this data collection method becomes more prevalent as a way to learn about these perceptions, we argue (like many of the cited scholars) that we should leverage these data in ways that can enhance our pedagogy. Additionally, when using social media data mining and coding, we found simply counting word choices would not suffice as a method of coding, which aligns with Chen, Vorvoreanu, and Madhaven's (2014) findings. For example, many of the tweets coded as NEGATIVE used words and phrases that would likely be associated with a positive attitude, such as "I like it how," "laughing," "hahahaha." Read holistically, however, these tweets indicated that the student felt angry, frustrated, worried, or another negative attitude and used sarcasm to convey that feeling. This difference may relate to Tweets themselves, which often use sarcasm and humor to denote a negative attitude. Likewise, many of the POSITIVE tweets included negative word choices and phrases that could easily be associated with a negative attitude such as "not sleeping," "you didn't follow the prompt," and, in one about group work, "I'm writing all of it." However, the use of emojis and/or the larger point of the tweet indicated a generally positive attitude. Examining students' attitudes toward specific pedagogical practices allowed us to better determine implications for teaching writing. Examples of both positive and negative tweets are provided in Table 2.

Positive Tweet Examples	Negative Tweet Examples
But this essay I'm writing thoo.... My professor is about to be blown away lol or at least I hope she is since I'm not sleeping at all today	why am I not writing my essay my English professor already hates my stupid ass
I got a 99 on an essay and my professor wrote, "you didn't follow the prompt at all but your writing was too damn good for a lesser grade"	I like it how my writing professor wants me to write an essay about the essay I've been writing for weeks

Table 2: Attitudinal Coding

Timeline Coding

Finally, in order to analyze the correlation between the attitude, professor, and stage in writing, we coded the tweets based on the point where the student seemed to be in the writing timeline, which refers to the broad stages of BEFORE, DURING, AFTER, or NOT writing. This coding was based on the tweet's tense and content. Table 3 provides examples of the timeline coding. Timeline coding chiefly involved analyzing word choices and tenses:

- **BEFORE**: writing process had not started yet, and:
    - "gonna," "will be," or "coming up"
- **DURING**: writing had begun but was not complete, and:
    - "am writing" or "writing"
- **AFTER**: writing was finished and/or graded, and:
    - "finished," "was writing," "comments" or "had written"
- **NOT**: no writing had been started, and:
    - "instead of," "not gonna bother," "avoid," or "supposed to be."

BEFORE	DURING	AFTER	NOT
Writing an essay on election for Trump supporting professor is gonna feel like a minefield	Writing an essay for a strict hard ass professor is just as hard as it sounds.	A/A on my HIS essay I feel like my professor giving everyone As lmao I be writing bullshits	Sorry professor, but my mind is absolutely incapable of writing an essay tonight or anytime soon. Rain check?
My professor gave us an essay I'm actually really excited about writing :)	I hope my professor will be as lost reading this essay as I am writing it. That'll teach him.	I stayed up late writing an essay that I have due tomorrow. 15 mins after I finish, my professor emails me and says class is cancelled	My professor thinks I'm writing my 1000 essay but I'm actually on here lol

Table 3: Timeline Coding

Each code was carefully analyzed to determine the general point in the writing process, but misinterpretations are certainly possible due to the imprecise nature of language. For example, we determined that the difference between NOT and AFTER was in language indicating avoidance of writing rather than completion.

Although some tweets coded as NOT indicated that an assignment had been given but not yet turned in, which could be coded as DURING, the tweet indicated that the student was intentionally doing an alternative activity or otherwise avoiding writing.

With each tweet coded for content, attitude, and timeline, we began axial and selective coding, which we used to "deconstruct the data into manageable chunks in order to facilitate an understanding of the phenomenon in question" (Cohen, Manion, & Morrison, 2011, p. 600). In other words, tweets were first sorted based on the point in the writing timeline (BEFORE, DURING, AFTER, and NOT). Within each of these four lists, we then coded the tweets, based on the attitude, as positive or negative. Because we conducted these processes together at each stage of analysis, we achieved 100% interrater reliability. The themes within the subcategories are discussed in the following section.

Findings/Discussion

We identified two overarching categories of tweets: instructor-focused and student-focused. The tweet's identification of the source of concern, issue, event, or other topic created the distinction between these categories. Instructor-focused tweets discussed specific ways an instructor presented a concept or taught in general, indicated that the professor is the audience for student writing, discussed feedback or comments, or mentioned some aspect of the topic of the assigned writing. Student-focused tweets discussed the student's perspectives on writing including giving minimal effort, taking responsibility for incomplete work, and the student's confidence as a writer. While the tweets in this latter category are worthwhile as data for future research, our goal of improving pedagogy calls our attention to instructor-focused tweets.

	Positive Tweets	Negative Tweets
Teaching Methods	44	81
Professor as Audience	50	30
Feedback	32	30
Topics	15	5

Table 4: Overview of Tweets Coded

In the following sections, we discuss four major themes identified in instructor-focused tweets: Teaching Methods, Professor as Audience, Feedback, and Topics. Within each of these subcategories, we further categorize the tweets into

the stage of the writing process (before, during, after, not) and the perceived attitude (positive or negative).

Teaching Methods

The most common subcategory of tweets, Teaching Methods, encompassed a range of issues, including how professors explain assignments, lengths of writing, timing and time between assignments, and more. Generally, tweets provided some insight into what students value and find frustrating in how their professors teach.

Before

In the subset of tweets that we coded as occurring before writing began, an indication of positive and negative experiences with receiving assignments and being taught or told how to write them is apparent (see Table 4).

BEFORE - Teaching Methods	
POSITIVE	● This writing professor literally taught us how to bullshit an essay to make it longer and I've never valued a piece of information more ● "Writing a synthesis essay is like having sex" - [instructor's name] (AKA my GSW professor) 😂😂 ● Writing professor: If any of you assholes use a stupid Cliché in your essay like "a picture is worth 1000 words" I will f***ing fail you 😂😂😂
NEGATIVE	● I don't like my writing professor, like can you explain the essay prompts more. You have a doctoral degree and you still struggle ● my professor just told our class that a 10 page paper is a "short essay" like exCUSE ME YOU ARENT THE ONE WRITING IT ● My professor gave us an essay assignment due the Monday after break so I guess I'll be spending break writing 2,000-3,000 words

Table 5: Example Tweets from BEFORE Teaching Method

Tweets coded as positive discussed ways the professor taught concepts, referred to the professor's use of fun, humorous, and/or interesting explanations, clear language, and other positive experiences that increased learning, thus a clearly positive or appreciative tone was apparent in regard to the way the instructor taught. Students discussed valuing or finding humor in these methods. Although intention is difficult to pinpoint, students at least seemed to enjoy this

part of the writing process as a result of the instructor's teaching practices, explanations, and policies.

In tweets coded as negative, the students expressed frustration at the instructor's inability to explain the prompt or assignment well enough for the student to understand the purpose and/or requirements of it. Particularly annoying for students was the professor's reference to writing assignments of six to ten pages as minimal work and/or scheduling assignments that overlapped or immediately followed one another or that were to be completed during a school break. As such, students felt overwhelmed and sensed a lack of empathy from the professor. Importantly, these policies and practices created a negative outlook prior to writing.

During

Tweets posted during writing often indicated the impact of a professor's methods on the student's perception of their current writing project. Interestingly, some tweets seemed to have been posted during class while others implied that writing was being done outside of class (see Table 5).

DURING - Teaching Methods	
POSITIVE	● My class complained about writing an essay and our professor called us dumbasses and said to shut up and write our papers lmao I love him ● Bless my Writing professor for extending my essay due date ● Professor: u can listen to music when writing ur essay Me: (Image of student smiling)
NEGATIVE	● I love when my professor doesn't email me back and it delays my essay writing 😑 ● We're working on this essay for my writing class & my professor wants us to analyze it a million times in a million different ways. Like no. ● My professor got us writing a essay with no adjectives ... the dumbest shit I've ever heard

Table 6: Example Tweets from DURING Teaching Methods

Tweets coded as positive discussed the professor's actions and policies including requirements, due dates, in-class activities, classroom management styles, and other pedagogical aspects. Professors who had decreased word counts or extended deadlines prior to the completion of the essay and who conveyed firm yet less traditionally rigorous methods of teaching were seen in a positive light. Listening to music while writing, excusing distracting students, and

colloquial language were appreciated by students and created a more positive attitude.

In tweets coded as negative, students discussed or provided examples of frustrations with the professor including policies, how material was taught, a lack of communication, the content of the course, and other issues. These tweets were similar to the negative experiences with teaching methods that occurred prior to writing; however, DURING tweets focused more often on the exercises and activities that instructors asked students to complete and/or requirements of the assignment with which students were struggling. One common theme was that students often did not understand why instructors asked them to complete their work in a particular way.

After

Tweets indicating that a writing project was complete often focused on teaching methods related to sequencing and scaffolding or moving due dates but also indicated that students desired validation for their work.

AFTER - Teaching Methods	
POSITIVE	● for my intro to writing class we had to go to starbucks and have our professor grade our essay in front of us as class today lmao
NEGATIVE	● Why does my writing professor feel the need to read someone's essay out loud? ● Stayed up all night writing this 7 pg essay and would you believe that the professor didn't even look at it? (gif of angry girl crushing can) ● catch me hiding my tears on campus because my professor told me she doesn't want my 5 page essay that i was up until 4 writing

Table 7: Example Tweets from AFTER Teaching Methods

One tweet discussed the professor's teaching methods after the writing assignment was completed. Though generalizing is not possible and the minimal data makes the intention difficult to determine, it is interesting that only one tweet mentioned positive experiences with teaching methods after completing the essay. The method of meeting in a neutral place and watching the grading process may be part of the reason the student holds a relatively positive view of the practice.

In tweets coded as negative, students discussed a lack of grading or reading the paper or mentioned that the instructor had moved the due date after the paper

had been completed. While some tweets that frustrated students were related to sequencing or specific pedagogy, the most common issue was due dates. Students indicated anger and frustration about a professor not collecting an essay on the due date. One factor was that, often, the student had been up all night or had used a significant amount of time on the essay, thus indicating that the student had not planned well; however, the anger was directed toward the professor's policies rather than the student's writing practices or time management.

Not

Tweets that connected the professor's methods to not writing indicated several important pedagogical aspects to consider and provide some indication for student frustrations and thinking processes when deciding on how and when to write.

NOT - Teaching Methods	
NEGATIVE	• When u did ur essay and both writing assignments and u still have another essay but debating to do it bc the professor never checks it • My professor has failed basically everyone so I'm not gonna bother writing my essay outline • Oops I forgot to write my essay, and I'm not allowed to use "big" words bc my professor is doubting my writing skills um

Table 8: Example Tweets from NOT Teaching Methods

These tweets discussed ways in which the class policies or teaching practices affected writing. Extensive work, perceived grading tendencies, and other methods professors used in class negatively impacted the student's attitude and caused a lack of desire to complete the writing assignment. These issues are important considerations for instructors across campus who may have minimal training in writing pedagogy.

Professor as Audience

Tweets that indicated student perceptions of the instructor were also prominent. Though a number of these tweets have implications for teaching methods, the Professor-as-Audience subcategory consists of tweets that show students' awareness of their professors and how this impacts their writing and process, including the professor's identity, political views, likes/dislikes, and more as potential barriers and/or supports for their writing.

Before

In the Professor-as-Audience subcategory, tweets often indicated the impact of a professor's identity, including cultural, political, and other factors, and/or the instructor's perceived attitude.

BEFORE - Professor as Audience	
NEGATIVE	● Writing an essay on election for Trump supporting professor is gonna feel like a minefield ● I'm dusting off my basic bitch essay writing skills because fuck you, history professor. ● When your rude Native American professor says "this should be fun!" about writing an essay, she's probably like (Video of Kevin from *The Office* chuckling)

Table 9: Example Tweets from BEFORE Professor as Audience

In negative tweets, students referred specifically to the professor as an individual who will perhaps unfairly grade or not appreciate the student's views or their writing. Students cited race, political views, and personal dislike as causes for negativity. In each of these tweets, the student indicated that their views, ideas, and writing will not be accepted or liked by their professor. Though there is not much information about the reasoning behind this belief, these students seemed to believe it is true, which is significant as these students do not see their professors as supporters of open mindedness, logical thinking, or clear writing.

During

Tweets posted during writing indicated the impact of the professor on the student's perception of their current writing project and their ability to write or complete it. While some tweets discussed the topic of the essay, the focus was the student's conception of the professor.

Many tweets coded as positive in this subset discussed the student's desire to impress the instructor with style, tone, citations, topics, and other, mostly surface-level, aspects of writing. These students considered the professor's biases before and during the writing process, and showed a desire to make the professor proud, do what the professor likes, or discuss a topic that was believed to be supported (e.g. increasing teacher pay), or at least not disliked by the professor due to individual characteristics (e.g. poverty's connection to race). Showing a positive attitude toward this idea were those students who had reconciled this notion and felt that they had dealt with it and would be able to impress the instructor.

DURING - Professor as Audience	
POSITIVE	• Don't: insult the professor in your essay Do: tie in loosely related terms from months ago to get them to love you • Writing my 10-page essay over why teachers deserve more money/respect to hopefully hit my professor's sweet spot plan ahead, kids • Lol writing an essay on poverty. Good thing my professor isn't white since poverty is a product of their idiocy and I'm writing it down
NEGATIVE	• My poli sci professor scares me so much I have been writing and rewriting my short answer essay responses for 3.5 hours just to do well • Currently writing an essay and thinking about how my professor will probably use it to wipe his ass later #droppingout • I'm writing about Palestine in my essay and I hope my professor isn't pro-Israel or I'm screwed 😖

Table 10: Example Tweets from DURING Professor as Audience

Tweets coded as negative discussed the student's real and/or imagined interactions with the professor. The distinct difference in this theme from before to during was in the interruption in writing that perceptions caused. The students stopped actively writing to think about their professor's potential reactions concerning their essay to tweet about it. Students were not considering a wider audience beyond the professor or had little reason to complete the writing assignment other than receiving a grade. This notion had a clearly negative effect as students were hesitant to write for fear of negative repercussions from the professor, based on personal characteristics.

Not

Tweets in this subcategory indicated that the student was avoiding writing due to a specific perception of the professor and showed a negative connection between the professor and the student.

These tweets discussed the student's view of the professor or how the student imagines the professor views the student. In these situations, the student's perception of the professor had caused the student to avoid writing. These tweets offer important considerations about how professors portray themselves to students in the classroom and what type of communication (e.g. conveying transphobia) is appropriate in the classroom.

NOT - Professor as Audience	
NEGATIVE	- why am I not writing my essay my English professor already hates my stupid ass - But I won't be writing my history essay since I'm dropping that class on Tuesday because my professor is a fuck ass - im failing a class but my professor is a transphobe so instead of writing my essay or emailing him im gonna watch law&order and nap

Table 11: Example Tweets from NOT Professor as Audience

Feedback

Tweets focusing on feedback indicated a number of practices that students found helpful and/or problematic. While it may be expected that positive feedback was met with positive attitudes from students while negative feedback was met with negative attitudes, these tweets also indicate particular practices and reasons for student attitudes.

After

Due to the nature of feedback as a practice, tweets in this subcategory occurred only after writing was completed. Students writing these tweets indicated pride at positive feedback and frustration or anger from minimal, negative, and other forms of feedback or grades.

Tweets coded as positive covered a wide range of feedback and comments from the professor after the writing assignment had been completed, including strong topics, praise received even after minimal effort, good grades, submissions to contests or publications beyond class, and positive comments. Tweets mentioned positive responses from the professor as the central point in determining how the student felt. These tweets might have especially important implications for students' beliefs about good writing and good writing practices. Additionally, these tweets discussed positive feedback from professors with or without the grade.

Tweets coded as negative discussed several types of feedback including grades, expected and actual comments or grades, issues with handwritten comments, and problems the professor mentioned having with the topic or requirements after the writing was completed. In each of these tweets, the central issue discussed was the professor's real or potential comments on student writing and/or grading methods. Therefore, these tweets may hold important insights about feedback on student writing.

AFTER - Feedback	
POSITIVE	- My professor called my essay "phenomenal" and "superb" maybe I should keep writing essays three hours before they're due - went 600 words over my last essay, but my professor loved every word of it. writing "excellent job" like 6 times. wow I'm so happy rn. - I got a 99 on an essay and my professor wrote, "you didn't follow the prompt at all but your writing was too damn good for a lesser grade"
NEGATIVE	- After writing out a 26 page double sided essay that took 6 hours this was the only comment from my professor (Image of handwritten paper with comment "yep") - When your professor gives you advice for writing an essay, you take it and she gives you a bad grade for it. Wtf. Fuck you - When you spend 4 hours writing an essay and your professor tells you it's not a good enough topic.

Table 12: Example Tweets from AFTER Feedback

Topics

The final subcategory of tweets addressed topics and indicated a focus on the subject matter for essays. While, as instructors may expect, students preferred to choose their own topics, other important pedagogical implications may also be gleaned from these tweets.

Before

Though the data from our study is certainly not generalizable, an interesting facet of the topics subcategory is that students tweeting prior to beginning their essays were generally positive in regards to their essay topics.

A number of tweets discussed topics in a humorous way, perhaps as a way of deflecting or coping with expected stress. The general tone, however, was positive and/or sarcastic (e.g. Bieber Fever), or the tweets discussed actual topics such as politics, social change, weed, video games, the necessity for college, and others. In some of the tweets, the student had obviously chosen a topic while in others the topic was provided, but in either case, the student was generally positive or even enthusiastic about the subject.

BEFORE - Topics	
POSITIVE	- I have an essay due on Wednesday that needs to be about a disease. Who thinks my professor would be ok with me writing about Bieber Fever - Professor: "write a 3-5 essay on a 'how to'". Me: "how to procrastinate in writing an essay." - Lol my sociology professor just said we'll be writing an essay on democracy in the US and the "orange one"

Table 13: Example Tweets from BEFORE Topics

During

Students tweeting about topics during writing discussed the subject and expressed concern about the topic or frustrations with it in process, thus indicating a negative attitude. While no connection can be made between before and during in this category, we found no tweets that were coded as positive in this subset.

DURING - Topics	
NEGATIVE	- I joked to my professor about writing my research paper on bees dying at an alarming rate, but now I'm stuck writing a 2000 word essay on it - Wow why in the world am I actually writing a essay on chickens rn.... plz send help idk what my professor was thinking - Writing an essay on something you don't believe in is so hard, so glad my professor and I disagree on everything ☺ ☺

Table 14: Example Tweets from DURING Topics

Whether an assigned topic or one jokingly discussed by the student, the frustration in these tweets came from a distinct issue with the content of the essay rather than the instructor or the fact that the instructor may have assigned it, as that issue would likely fall under teaching methods. Instead, students indicated struggling with what, how, and why to write about these topics. They seemingly felt no connection to the topic or did not completely understand it.

In the next section, we discuss possible pedagogical implications for WAC and other writing-focused programs.

Discussion

Several implications are apparent from our study of students' public tweets. First, it is clear that students are using Twitter to air frustrations, publish proud moments, express anger about practices they deem unfair, and communicate with a larger community of student writers and others throughout the writing process. Thus, we argue that Twitter offers a unique perspective on students, instructors, and formal writing assignments. However, we do not advocate for infringing upon privacy or anonymity in any way. While we suggest that general, broad analyses of organic, public tweets as a method for research provides an opportunity to identify the issues and acknowledge the successes of students and instructors, we also insist that researchers follow ethical guidelines and that individual instructors or institutions do not seek out public, organic tweets of their own students for research purposes.

Second, in analyzing tweets, we identified a clear connection between the instructor and students' writing beyond the proximity of our selected keywords. These findings suggest several pedagogical implications for writing assignments and instruction that are applicable to any course that employs writing as a learning method. With this goal in mind, we pinpoint several concrete pedagogical practices that may improve students' learning, writing, and classroom experiences.

Pedagogical Applications

Our study suggests that successful writing assignments necessitates purposeful instruction, and we have identified four overarching implications. In the following sections, we draw upon the work of scholars in composition and WAC/WID to discuss each of these implications.

1. Teach writing as a process with balanced scaffolding and topics that students care about

Teaching writing as a process rather than a product is commonly considered a best practice in composition pedagogy and is an important consideration for WAC/WID pedagogy as well. While reviewing the history of the "process movement" in composition studies is not our goal here, the conception of writing as a linear (i.e. plan, draft, revise) process likely remains apparent in many classrooms, including those in English departments. However, as Irene L. Clark (2003) writes, "The problem with this linear view of writing...is that it does not reflect what writers actually do" (p. 8). Instead, drawing upon a basic conception of post-process theory, many compositionists argue (see Russell, 1999, for example) that "there are many writing processes…[and]...that some writing activities can be performed mechanistically, whereas others cannot" (p. 21). Similarly, the "Statement of WAC Principles and Practices" (2014) indicates that process is an essential aspect of teaching high-stakes/graded writing: "The

writing process is long and complex, with the writer revising in response to developing ideas, reader feedback, and a deeper understanding of the rhetorical situation" (p. 5). Based on our analysis of student tweets, however, the nuances of teaching writing as a process may require further discussion and training. Particularly, at the front-end of the writing process, students preferred specific instruction ("professor divided what she wants per page," "taught us how to bullshit an essay to make it longer," "'Writing a synthesis essay is like having sex'") on the *how* of writing essays. While these tweets occasionally indicated possible problematic teaching strategies, students appreciated writing-focused discussions/activities that were directly applicable to the assignment. Frustrations were also apparent ("can you explain the prompts more," "And finally on week 7, after we have submitted 5 essays, my writing professor teaches us how to write an essay", and "Who would've known writing a 3 page essay on something your professor hasn't taught could be so difficult 🙂") when instruction was ineffective, minimal, and/or poorly sequenced. Incorporating careful scaffolding is an important pedagogical consideration, as students find well-sequenced and well-scaffolded writing-intensive courses more effective (Leggette & Homeyer, 2015).

On the other hand, too much structure in teaching writing as a process created frustration: "My English professor is trying to force me to write my body paragraphs before writing my intro. Last I checked it's my essay." We suggest, therefore, that instructors balance structured activities at the front-end of the process with the students' agency as writers. Allowing students to choose whether to outline, freewrite, or create maps as they get control of their topics; involving students in discussions of what counts as credible research in the discipline; and, among others, students drafting based on their needs as writers rather than the requirements of the instructor are possible strategies. Additionally, many tweets indicated that a category of topics with relatively open selection was preferable, such as "about a disease" or "on a how to" and others indicated that topics could be proposed, such as "Told my professor I'm writing my essay about weed" and "I'm writing an essay about the time I got high as fuck and lost in [city] with friends and my professor approved of it." Topic categories allow instructors to maintain control of student writing, scaffold more effectively due to the similarity of genres, and may increase the care that students have for the assignment. Lois Ablin (2008), for instance, discusses course-specific topics that hold a deeper interest for students when the assignment connects their writing to future career goals.

Essentially, the instructor should guide the students' writing process and topic selection as a component of the course content and as a teaching tool rather than incorporating strict requirements for writing phases or topics and expecting students to complete the process without instruction or solely from previous instruction.

2. Establish clear assignment parameters and rationales, including a rhetorical context

Similarly, writing assignments should balance structure and agency. For example, the student who tweeted "Psychology professor wants us to write an essay but it can't be an opinion report, creative writing, argument etc. Lady wtf do you want! 😑" clearly had an issue with the assignment prompt and/or the professor's explanation of it. While it is unclear if the student was perhaps distracted or misread the prompt, the methods this instructor used did not effectively communicate expectations. An effective method for balancing may be similar to those discussed by Bean (2011), who indicates that a writing assignment should be an interactive, meaning-constructing task with clear explanations of expectations (p. 97). In line with Bean, several tweets showed appreciation for clear yet open explanations: "Writing an essay and the professor said to have fun with it. So I could either write a regular paper, or I can make a funny one #decisions." Although a decision was being pondered, the student felt that they had the agency to decide based on their grasp of what was allowed and/or expected.

Similarly, tweets indicated a desire or need for rationales regarding writing assignment parameters. When an instructor had overlooked this step, tweets showed frustration. For example, "not allowed to use 'big' words bc my professor is doubting my writing skills um" and "My professor got us writing a essay with no adjectives ... the dumbest shit I've ever heard," might indicate that students were not provided with rationales or did not fully understand them. Developing students' adherence to assignment parameters is an important task and should not be considered automatic. In Stefan Perun's (2015) discussion of developmental writers in a community college, for example, students were often unfamiliar with college-level teaching practices, such as revising and adhering to assignment criteria as provided by the instructor. Instead, they expected to quickly complete assignments and receive passing grades.

As an additional step, we argue that writing assignments with clear parameters for rhetorical contexts or options for potential rhetorical contexts may help alleviate issues with professors as the only audience. Whether students showed a clear desire to impress or to not offend their instructors, they clearly felt that the instructor's individual characteristics ("rude Native American professor"), personality ("strict hard ass professor"), or beliefs ("my professor is a liberal new mother"; "Trump supporting professor") influenced what students believed they should say or could not say in their writing, thus limiting their learning and expression of ideas. As Bean (2011) states, "When designating formal writing assignments, instructors should consider how variations in the rhetorical context--purpose, audience, genre--can create significant differences in students' writing and thinking processes as well as in their final products" (p. 93). Bean also provides examples of rhetorical contexts such as nursing students writing hypothetical grant proposals for a hospital or an argument to a hospital review

board (p. 92). With effective rhetorical context, the professor's identity may be diminished as a factor in the students' writing process.

In addition to rhetorical context, we highlight here the importance of a teaching persona. The idea of "performing neutrality" (Kopelson, 2003) is considered an important strategy for writing pedagogy that could help to quell this fear in students' thinking about writing assignments. Within this strategy, professors maintain personal neutrality in the classroom in order to foster open-minded thinking and student-centered learning.

3. Acknowledge students' time and effort

Of at least equal importance to creating effective writing assignments is grading them. A number of tweets indicated students' perspectives on grading and/or feedback from instructors and several mentioned grades and/or actual comments, including "impressed," "very nice and relevant things," "absolutely loved it," "clear writing style," "thanks for writing this," and several that mentioned the professor's advice to publish or enter a writing contest. Positive feedback was typically met with positive reactions from students and general indications of pride and confidence, despite these vague comments. While these results are not surprising, they do indicate the significance of instructors corroborating students' writing skill. Larry Beason (1993) notes that "positive feedback does not always result in better final drafts, but it plays a vital role in helping student writers recognize their strengths and gain confidence" (p. 411). Conversely, negatively charged tweets were also broad but often interpreted instructor comments/feedback rather than quoting: "my writing is 'too colloquial,'" "she basically told me i was a pos and suck @ writing OK cool," "professor doesn't appreciate my talent," "professor…didn't like [my] writing," and "professor tells you it's not a good enough topic" among others. Interestingly, several of the negative feedback tweets indicated that the student felt that comments were related to the professor's personal view of the student, whereas very few of the positive comments evoked this kind of correlation.

We argue that instructors assigning any type of writing develop clear and informed feedback and grading practices that are shared with students at the beginning of the writing process. As Elizabeth Chiseri-Strater (1993) writes,

> Students resent not understanding the grading process being used. If they end up with a C when they felt that all along they had been doing above-average work...they become angry. And rightly so. Students feel manipulated and co-opted by teachers who refuse to reveal their grading process or who cover their own anxieties by suggesting that grades are not an important part of the course. (p. 179)

A number of scholars have conducted studies that work toward the development of assessment criteria (see Thaiss & Zawacki, 1997; Haswell & McLeod, 1997;

Broad, 2003, for example) specifically in WAC programs. While our analysis of tweets cannot provide significant insight into the best practices due to the minimal nature of tweets, we argue that, from students' perspectives, best practices for assessment are crucial conversations, and we argue that these conversations should occur in and between WAC programs and FYC programs more often. Creating outcomes-based assessment practices that are clearly outlined for students may help instructors leave fewer broad comments and less vague feedback--whether positive or negative--in an effort to acknowledge the time and effort that students spend on writing assignments.

4. Consider students' perspectives and experiences

Finally, we argue that students' needs and learning capacities as novice writers should be carefully considered as instructors develop and teach writing assignments. An underlying component of this suggestion lies in student experiences with writing. For example, high schools that emphasize college admissions may focus on SAT preparation such as timed writing, five-paragraph essays, and incorporating detail rather than research practices. Matthew J.X. Malady (2013), citing interviews with Anne Ruggles Gere and Les Perelman, writes:

> College professors . . . expect their students to be able to demonstrate evidence-based argument in their writing. This involves reading and synthesizing materials that offer multiple perspectives, and writing something that shows students are able to navigate through conflicting positions to come up with a nuanced argument. For those trained in the five-paragraph, non-fact-based writing style that is rewarded on the SAT, shifting gears can be extremely challenging. "The SAT does [students] no favors," Gere says, "because it gives them a diminished view of what writing is by treating it as something that can be done once, quickly, and that it doesn't require any basis in fact." (p. 3)

With this conception of student experiences in mind, we argue that instructors should consider students' unfamiliarity with writing processes, including time management, managing stress, planning, thinking processes, research, and so on.

One of the more prominent issues raised in students' tweets was moving due dates and/or not collecting essays on the day assigned. While, anecdotally, instructors may believe that the majority of students will be pleased when given more time, tweets indicated that this was not always accurate: "i stayed up until 7 am last night writing a 10 page essay that my professor didnt even collect today hahahahahahhaahahahahahahahahahahahahah"; "Omfg I stayed up all night writing this fucking essay and the professor just decided in class to push it back to Tuesday omfg 😤😤"; "IVE WASTED SO MUCH TIME TODAY WRITING THIS ESSAY AND MY PROFESSOR EMAILED THE CLASS TO SAY ITS NOT DUE

UNTIL FRIDAY RAGE." Several tweets suggested that students felt angry when due dates were extended on or just before the deadline and implied that time management was the chief issue. Essentially, when students prioritized essay writing over other demands, they reacted negatively to deadline changes, often because they had lost sleep or time for other courses. While students typically appreciate extensions in the days leading up to the due date, instructors should consider that college students may often struggle with time management and balancing their coursework.

Similarly, other scheduling issues appeared in several tweets. Students wrote negatively about assignments due immediately following school breaks ("My professor gave us an essay assignment due the Monday after break so I guess I'll be spending break writing 2,000-3,000 words"), overlapping writing assignments ("my english professor talking about 'we writing a essay' bitch I'm still on the first essay."; "writing professor: *gives us ANOTHER essay on top of the freshman essay* me: 'welcome to your tape'"), and scheduling writing assignments immediately following a due date ("Damn we just turned in our essay last night and our freakin professor just gave us another writing project ugh😑✏️"). These tweets indicate that students appreciate breaks and that they felt overwhelmed by multiple writing projects conducted simultaneously. Due to the nature of writing as a higher-order process that requires significant time and effort, instructors could reduce students' stress levels by scheduling around school holidays and separating writing assignments to allow for decompression.

We also suggest that instructors discuss writing in a way that contributes to learning and supports students' abilities as novice writers. Many tweets, for example, indicated that instructors may not address students as people who are learning to write/writing to learn: "my professor assigned an eight page essay and then was like, 'this is a remarkably short amount of writing' LOL"; "my professor just told our class that a 10 page paper is a 'short essay' like exCUSE ME YOU ARENT THE ONE WRITING IT"; "i know my professor said this essay isn't hard but... it's HARD!!!! and this is coming from someone who loves writing essays!! [photo of crying girl]." These and other tweets suggest that students are not familiar with lengths of college-level essays and are uncomfortable with the complexities of writing. Instructors who wish to support their students might consider that many high school students have not written essays longer than five paragraphs; thus, moving into a college writing environment in which eight or more pages is considered short and easy directly conflicts with their experiences.

Conclusion

We have suggested four overarching pedagogical implications that may be useful for instructors who incorporate writing components in their courses. Since the tweets in this study were collected from various disciplines across various universities and colleges rather than writing courses only, the findings suggest that writing instruction within multiple disciplines could benefit from the results.

Writing is assigned by instructors across campus and at all levels, and professors may need to adjust practices in order to foster more positive attitudes toward writing.

The overriding implication of this study is that professors impact students' attitudes toward learning and writing in positive and negative ways. While this notion may be commonsensical to many in higher education, this study provides several specific indications of instructor influence in students' writing processes. Using Twitter as a tool to gain insights into common issues and perceptions students have about writing across campus can be helpful to improve pedagogical practices and students' agency and confidence.

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