It's All in the Notes: What Session Notes Can Tell Us About the Work of Writing Centers

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Structured Abstract

- **Aim:** This research note focuses on how corpus analysis tools can help researchers make sense of the data writing centers collect. Writing centers function, in many ways, like large data repositories; however, this data is under-analyzed. One example of data collected by writing centers is session notes, often collected after each consultation. The four institutions featured in this note—Michigan State University, the University of Michigan, Texas A&M University, and The Ohio State University—have analyzed a subset of their session notes, over 44,000 session notes comprising around 2,000,000 words. By analyzing the session notes using tools such as Voyant, a web-based application for performing text analysis, writing center researchers can begin to explore critically their large data repositories to understand and establish evidence-based practice, as well as to shape external messaging about writing center labor—separate from and in addition to impact on student writers—to institutional administrators, state legislators, and other stakeholders.

- **Problem Foundation:** This section identifies a key problem in writing centers—there are large amounts of data but no easy way to analyze that data.

Session notes are a common record-keeping practice in writing centers, yet few researchers have critically examined these documents, and fewer still have utilized any type of discourse, textual, or corpus analysis to do so. Those studies that do are either limited in scope (Brown, 2010) or are labor-intensive because they require hand coding (Hall, 2017). Additionally, few cross-institutional collaborations or partnerships exist among writing center research. Therefore, our experiment with corpus-level analysis of session notes has the potential to break new ground in writing center studies that can lead to innovations in training, assessment, and field-based practices.

- **Information Collection:** This research note uses Voyant, a free open-access web-based application, to perform a textual analysis on session notes from four institutions. Institutional writing centers each analyzed 500,000 words from session notes encompassing the last two to five years. Each institution has a different audience for its session notes. OSU, MSU, and TAMU share documents with clients upon request. TAMU's online writing center automatically sends notes to clients, while University of Michigan only shares notes among staff (not instructors or students). Voyant is one tool among many (e.g., AntConc, CohMetrix, KNIME Analytics Platform, and Word Stat) that researchers can use to identify their analytical priorities, whether it be structural linguistics, contextual linguistics, socio-cultural discourse, or some combination therein. Because the field of writing center studies is only just starting to apply corpus analysis, we suggest that as corpora are developed within the field, corpus analysis can become more sophisticated and varied, and different programs can serve different functions and needs. Programs such as Voyant are free multi-featured and open-access online programs that provide high-quality visuals. For this project, each researcher chose which tools in Voyant to use based on the interests and goals of the institution and writing center. Tools used include Corpus Terms (a table view of term frequency in the entire corpus), Cirrus (a word cloud that visualizes the top frequency words of a corpus), Contexts Tool (which shows each occurrence of a keyword and how it co-occurs with words/phrases to the left and right of it), and Collocates Graph/Links Tool (which represents keywords and terms that occur in close proximity as a force directed network graph).

- **Conclusions:** Tools such as Voyant offer an effective way to provide broad insights into the work of writing centers through a corpus analysis of session notes. As each institution demonstrates, a wide variety of questions are answerable by tools like Voyant, including ones that are specific to individual centers and institutions. Corpus analysis of session notes can provide a broad view of the ways that language functions within sessions to enhance and concretize writing centers' sense of the work they, and their consultants, do.

While corpus analysis does not provide all of the answers for writing centers, when this analytic method is coupled with other quantitative and qualitative strategies for understanding the work of writing centers and the interactions that take place therein, it can provide us with the insights needed to support consultants and clients while improving the center.

- **Directions for Further Research:** While this research note demonstrates the capability of analytical tools like Voyant to help individual institutions understand and assess their writing centers, directions for further research include comparing the institutions as well as creating a corpus of the combined institutions' session notes. Because there are no current reference corpora for writing centers, as there are for contemporary American English (for example, the Corpus of Contemporary American English (COCA), this collaboration can aggregate and create corpora for other institutions to utilize in their own analyses. By creating a reference corpus, we can extend the research impact of our work and make findings more powerful and, potentially, significant as other writing centers take up this work.

Keywords: corpus analysis, session notes, writing analytics, writing centers

1.0 Aim

In many ways, writing centers are large data repositories. Writing centers collect numerous forms of data including, but not limited to, registration information, intake forms, report forms, surveys, observations, and focus groups. However, because of the amount of data writing centers collect, it is not always possible to fully analyze the data, or even store it in accessible ways. Furthermore, it appears that writing center administrators are often left "reinventing the wheel" whenever the need for new documentation arises (i.e., creating new session note questions or creating new assessment of intake forms). All of these features of the modern day documentation of writing center administration and "work" are time consuming and often redundant, and do not necessarily yield immediately relevant results. For example, Bugdal, Reardon, and Deans (2016) identify tutors' frustration with the time-consuming nature of session documentation because, to many, there is no clear reason for filling out session notes or other forms. It appears that the robust documentation and data collection in our centers is divorced from our practice. Assessment of these documents, then, is a necessary step in moving beyond merely recording and storing data.

Our work focuses on session notes (completed by a tutor after a session)—a persistent form of documentation from the early history of writing centers. Until recently, there has not been an easy way to explore or make sense of these types of documents, which often number in the thousands or tens of thousands for each writing center. Current published research on session notes (Brown, 2010; Bugdal et al., 2016) is limited in scope or outcome, perhaps because, as

Schendel and Macauley (2012) identify, there is long-held resistance in writing center work towards quantitative methods of assessment (p. 3). However, Rich Haswell's (2005) call for more RAD (replicable, aggregable, and data supported) research in the broader field of composition studies has been taken up and interrogated by scholars in writing center studies (Driscoll & Perdue, 2012; Giaimo, 2017), and the field is seeing a renewed interest not only in quantitative research methods but, also, a new interest in big data studies. To support this interest, *Assessing Writing* established a "Tools and Tech Forum" recently (2017), which provides "detailed reviews of assessment tools and technologies" to guide researchers in making informed assessment choices (p.1). The current issue focuses on corpus analytics tools that support understanding student writing assessment (Aull, in press). While quantitative and big data assessment is critical in understanding the internal workings of a writing program or center, this information is just as important, as Anson (2008) notes, in "changing the public discourse about writing from belief to evidence, from felt sense to investigation and inquiry" (p. 32). By joining Haswell's (2005) call for more RAD research within the field of writing analytics, this research note demonstrates one way to effectively examine session notes, through corpus analysis, which can then be used by other centers.

2.0 Problem Formation

Research on session notes spans over 25 years. However, as Weaver (2001) observes, a lot of early research on writing center session notes was focused on the institutional function or utility of the document—such as "the benefits and drawbacks of conference summaries"—rather than the document's rhetorical moves or structures (p. 35). Other studies raised ethical and philosophical issues surrounding sharing these documents with external populations, such as faculty (Conway, 1998; Crump, 1993; Jackson, 1996; Pemberton, 1995). There was also, early on, general research on whether or not writing centers should engage in the practice of writing session notes (Larrance & Brady, 1995). Only one early study analyzes some of the general rhetorical moves that tutors make in filling out session notes (Cogie, 1998), though the study is limited in its data set and does not share any session note models/templates. A recent study by Bugdal et al. (2016) provides a limited-scope discourse analysis of session notes as "types" (reporter, bro, coach, cheerleader, quick note) but ultimately focuses on the use-value of the notes (whether students find them helpful, what faculty and tutors think about them, and so forth) rather than exploring the rhetorical function of the notes prior to dissemination. Indeed, there is little research that has actually studied these documents from a rhetorical standpoint and that shares their findings (or even examples of the genre itself!).

The studies that apply discourse analysis to session notes are either limited in scope or outcome (Brown, 2010; Bugdal et al., 2016). A notable exception is R. Mark Hall's recent book, *Around the Texts of Writing Center Work: An Inquiry-Based Approach to Tutor Education* (2017). In it, Hall uses a variety of analytical tools to examine common documents that writing centers produce, including session notes, with an aim toward understanding the notes that tutors produce. He uses emergent coding to develop a list of ten codes for the most common rhetorical

moves in session notes and applies these coding schemes to a random sample of 700 notes from the approximately 7000 notes that he collected. He further uses three of Gee's (2014) tools for discourse analysis to closely analyze three session notes for the ways in which they create identity, build relationships, and create social good.

Writing center scholars, such as Hall, have long employed discourse analysis but often on a much smaller scale. Hall's work (cited above) hand codes 700 session notes for rhetorical moves and applies detailed discourse analysis to only three session notes. As Hall's work demonstrates, discourse analysis is time consuming and requires the codifying of information, counting words, or other forms of labor, all of which may not be consistent. For example, Hall notes that he coded the project in thirds, and in three different ways, collaboratively with a student rater, separately from a student rater (but then they compared findings), and by himself (p. 92). Recent examples of discourse analysis in writing centers, such as Robert Brown's "Representing Audiences in Writing Center Consultations: A Discourse Analysis" (2010) as well as Jo Mackiewicz and Isabelle Thompson's "Adding Quantitative Corpus-Driven Analysis to Qualitative Discourse Analysis: Determining the Aboutness of Writing Center Talk" (2016) run into the problem of scalability. Brown's work focuses on ten consultations, which are all recorded and transcribed by him; however, the work is very narrow in focus and scope, specifically looking at medical school applications. Meanwhile, Mackiewicz and Thompson's work focuses on twenty individual consultations, which they transcribe and then analyze using AntConc. Lastly, Jo Mackiewicz's book, *The Aboutness of Writing Center Talk: A Corpus-Driven and Discourse Analysis* (2017), goes more into depth through an examination of consultation transcripts but does not analyze session notes.

Building on the work of Hall (2017), Mackiewicz (2017), Mackiewicz and Thompson (2016), and others, our project conducts a large-scale corpus analysis of session notes from writing centers across four large public universities, including Michigan State University, the University of Michigan, Texas A&M University, and The Ohio State University. Our project utilizes Voyant, a free, open-access web-based application for performing text analysis on the session notes. Each institution created a corpus of session notes and then analyzed that corpus using a variety of Voyant documentation tools. We argue that it's hard for writing center administrators who manage multiple sites and large staffs to always know what is occurring "on the ground." And while a number of practices are in place to keep a pulse on the day-to-day activity and labor that occurs in writing centers, more often than not, it can feel like we are moving forward without a clear sense of what our staffs or clients need in terms of support. Of course, there are a number of documents that writing centers already use to track their work and, dare we say, progress, such as appointment forms, client exit surveys, and observation documents. However, if the institutional context is similar to the Big Ten University Writing Centers included in this study, or Texas A&M, it can be an overwhelming task to process, review, and evaluate thousands (or more) of session notes, or some hundreds of observation documents, annually. In this research note, we demonstrate the ways in which conducting a

corpus analysis of session notes using Voyant can tell us more about our own specific institutions, identify the gaps in our center's practices, and point towards future training.

3.0 Information Collection

In the analysis that follows, we provide a method for developing questions practitioners might ask of their centers' practices and of its data, specifically utilizing Voyant as the analytical tool. We then demonstrate how different visualization tools in Voyant yield different findings for each of the four institutions' data sets. Therefore, it is imperative that Voyant's tools are put into conversation with one another prior to identifying any trends that otherwise might seem conclusive when analyzed separately. A screenshot of Voyant is shown in Figure 1 below.
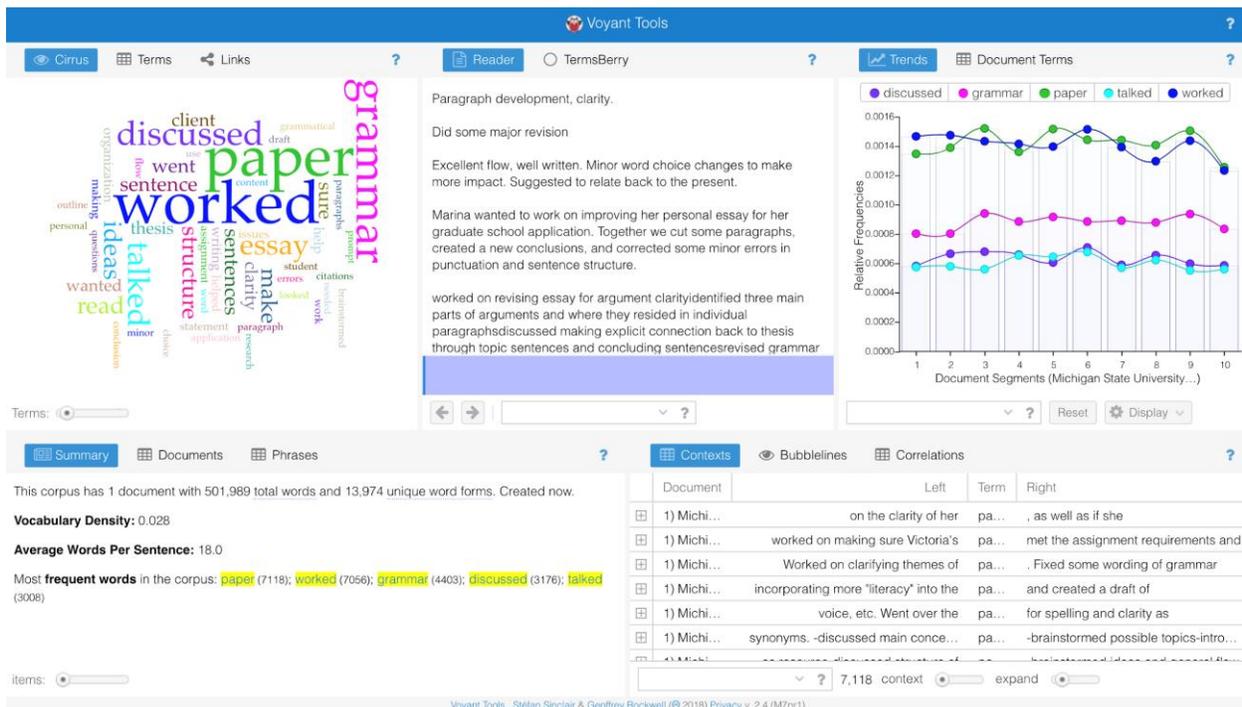

Figure 1. Voyant tools.

This image shows the default interface when loading a corpus into Voyant. While it is separated into five panes, they can all be individually expanded, or minimized. Additionally, each pane features other tools that the researcher can switch to. For example, in the top left pane, clicking on "Links" would generate a collocates graph in that pane. More tools are available by clicking on the window icon that appears when the mouse is in the header of a tool. A menu will appear that shows recommended tools for that location above the line and a hierarchy of other tools below the line ("Getting Started"). Many of the tools are interactive and contain additional features within the pane. Additionally, researchers can export their charts and visualizations as a URL and embed them in remote sites like documents, presentations, and videos. (Some data can also be imported to Excel for further analysis.)

Our project is a cross-institutional study of session notes (also called client report forms or summary notes) using corpus analysis in Voyant. The members of the research team include Genie Giaimo (Writing Center Director at The Ohio State University), Joseph Cheatle (Associate Director of The Writing Center at Michigan State University), Candace Hastings (Director of the University Writing Center at Texas A&M University), and Christine Modey (Faculty Director of the Peer Writing Consultant Program at the University of Michigan).

In creating this research team, we have considered both comparable institutions (Big Ten, SEC) and writing centers, as well as how institutional differences affect the culture surrounding session documentation. The project was IRB approved at all four institutions. We first entered the session notes from each individual institution into Voyant. Data were selected from a randomized set of session notes and were limited to roughly 500,000 words, in order to balance the difference in numbers of sessions per year and numbers of years of data collected from each institution, as some institutions had recently switched their data collection practices. Each chose to individually utilize a series of Voyant tools, based on the interests and goals of the institution. The tools, and the institutions that used them, include:
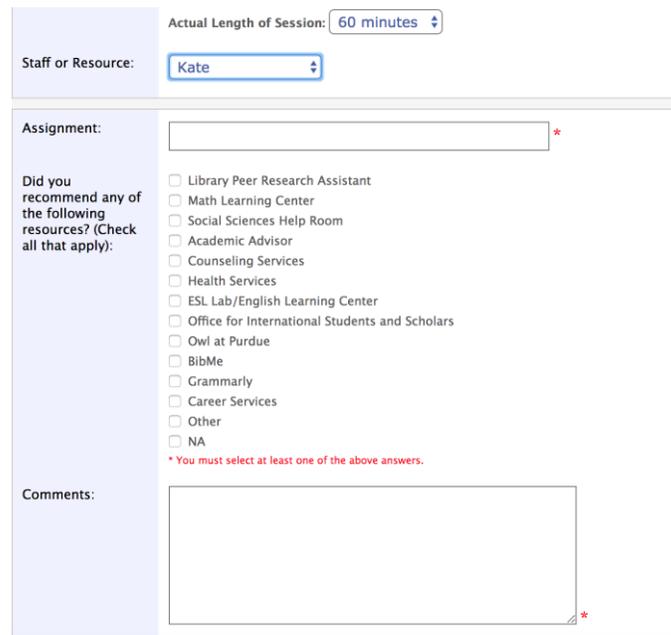
- **Corpus Terms** - a table view of term frequency in the entire corpus (Michigan State University, the University of Michigan, Texas A&M University, and The Ohio State University))
- **Cirrus** - a word cloud that visualizes the top frequency words of a corpus (Texas A&M University)
- **Collocates Graph/Links Tool** - represents keywords and terms that occur in close proximity as a force directed network graph (Michigan State University)
- **Contexts Tool** - shows each occurrence of a keyword with surrounding text (The University of Michigan, Texas A&M University, and The Ohio State University)
- **Corpus Summary** - examines vocabulary density (University of Michigan and The Ohio State University)

Each section below explains the context in which the tools were used as well as the results of using those tools.

3.1 Michigan State University Data Collection, Joseph Cheatle

The client report forms at Michigan State University were completed by the consultant after each consultation using the WCOnline scheduling system. As shown in Figure 2 the "Actual Length of the Session" is a drop-down menu with minutes from 5 to 60 at five-minute increments. For "Assignment," there is a text box where consultants can write in the type of assignment clients worked on. This text box is often "personal statement," "essay," or something similar (not usually longer than a few words). Consultants then fill out a recommendation of resources column, where they can check boxes if they recommend different services to students (such as the Library Peer Research Assistants, Math Learning Center, Counseling Services, or the OWL at Purdue). Finally, consultants complete a comments box in which they are supposed to provide an overview of the consultation. This section is the most expansive and often requires a few

minutes for consultants to fill out; however, there are instances where consultants either do not fill out the form or provide a truncated picture of the consultation. The length of notes from the consultant generally varies from a few words to a paragraph. While MSU's writing center has always asked for length of session, assignment, and comments, the addition of the resource recommendations is new in the last few years. Consultants receive minimal training for completing the client report forms but do receive training on how to recommend services to students.

Figure 2. Michigan State client report form.

Historically, the notes left in the Comments section have been under-utilized as a form of assessment or evaluation for the MSU Writing Center; rather, they have been primarily used in the case of a dispute or concern during a consultation that needs to be reviewed by an administrator.

Corpus analysis can be used as a starting point to determine what consultants are doing during consultations, how they talk about what they do, and whether the things we talk about during our trainings and advocate as a center are reflected in actual consultations. The Writing Center at Michigan State University, according to the center's "Vision Statement," centers on "encouraging and facilitating collaboration." MSU also frequently talks about editing in the peer tutor training course, during orientations, and during staff meetings; specifically, how consultants should not focus on correcting spelling and grammar mistakes. Rather, they should focus on more global issues like organization, thesis, evidence, and introductions. Using corpus analysis, we can analyze session notes to see if the values talked about in training and the center are reflected in how consultants write about their sessions.

Between Fall 2012 and Summer 2017, MSU had over 30,000 consultations; however, when accounting for times when forms were not completed or incomplete, there were 23,794

client report forms completed after consultations. All client report forms were completed by the consultant. The top twenty terms and the number of times they appear in consultations were determined using the Corpus Terms tool in Voyant. These are included below in Table 1.

Table 1

Top Twenty Terms in Michigan State Corpus

Rank order	Term	Number of Times Used
1	Paper	9148
2	Worked	8456
3	Grammar	5083
4	Sentence(s)	4593
5	Discussed	4079
6	Talked	3910
7	Essay	3127
8	Ideas	2933
9	Read	2825
10	Structure	2691
11	Make	2548
12	Sure	2393
13	Went	2285
14	Thesis	2175
15	Client	2157
16	Clarity	2060
17	Writing	1886
18	Wanted	1826
19	Help	1813
20	Organization	1740

These keywords paint a particular picture about the Michigan State University Writing Center, some aspects of which the center promotes and some that go against the narrative that it wants to represent (which can also indicate areas that need improvement). A number of the words are in line with the way the center promotes its work, what it emphasizes in staff training, and how it is perceived by consultants; these include the words *worked*, *discussed*, *talked*, *read*, *make*, and *help*. Each verb describes actions in the center that are active, verbal, and often collaborative. They are also about creating and building. The positive is that *ideas*, *structure*, *thesis*, *clarity*, and *organization* do appear on the list of top twenty words used in client report forms; furthermore, their frequency highlights a holistic focus on the text that looks at what are

traditionally considered "higher order" concerns. However, the keywords also point out some potential problem spots (or, conversely, opportunities for refinement or improvement) for our center and what occurs during consultations. For example, *grammar* is the third most frequent term and the first to describe what was actually worked on, discussed, or talked about; meanwhile, *sentence(s)* is the fourth most frequent term. The high frequency of both terms, and the large gap between them and terms like *ideas* and *thesis*, suggests the continued focus of consultations on grammar and sentence level issues.

The Collocates Graph/Links Tool in Voyant provides additional information about the Michigan State University Writing Center. The tool collocates terms in a corpus through a network analysis; furthermore, it provides a visual representation of the links. For the Links tool (visualized through a collocates graph in Figure 3), keywords are shown in blue and collocates (words in proximity) are shown in orange. In the case of the Michigan State University Writing Center, the graph reinforces the fact that the vast majority of people are working on papers (as opposed to digital composition). The graph also highlights that grammar and spelling remain central to consultations; both *worked* and *grammar* are closely related to *sentence* and *structure*. The focus on sentence-level work goes against the desire by our writing center to work primarily with global issues. However, it is significant that *paper* is in close proximity to *discussed*, *read*, and *talked*. This association indicates, in a variety of ways, the importance of reading and talking during consultations.
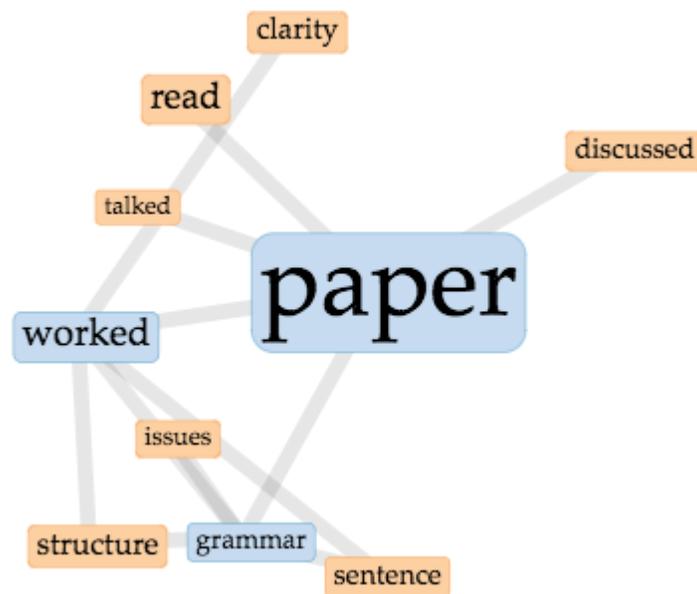

Figure 3. Collocated terms in Michigan State corpus.

A simple tool like Voyant can be used to help us understand The Writing Center at Michigan State University from the perspective of consultants who fill out client report forms post session. Specifically, they point out that communication and collaboration is central to consultations; furthermore, they highlight the importance of discussing ideas, structure, thesis, clarity, and organization during consultations. However, they also highlight areas where refinement of the pedagogical philosophy and tutoring mission might occur: it may be the case that too many consultants are working on spelling and grammar in comparison to global concerns. While working on grammar and spelling is not necessarily a problem, the fact that these elements of conventions are much more frequent than more global concerns is problematic and suggests that what is talked about in training and the mission are not always translated to consultant practices. This analysis also gives us ways of progressing into the future, specifically in encouraging consultants to stress higher order concerns even as they discuss grammar and spelling, having a broader discussion about client report forms and why they are important, and providing more structure for the client report forms. While analyzing client report forms does not show us the entirety of the center (or even a large portion), it does provide a view of consultants after sessions; furthermore, this analysis prompts engagement in conversations about what administrators think occurs during sessions, what consultants report occurs during sessions, and how these can be both similar and different.

3.2 University of Michigan Data Collection, Christine Modey

The undergraduate writing consultants at the University of Michigan's Sweetland Peer Writing Center complete a client report form on WCOnline at the end of each writing consultation. The current version of the client report form has been used since January 2016. The completion of the form serves two key purposes within the Sweetland Peer Writing Center. First, it gives consultants the opportunity to communicate with each other about sessions—what writers wanted to work on, what the consultation actually covered, and what tutoring strategies were effective or ineffective. Second, it gives consultants the opportunity to reflect on their own experiences in the center and to think about their own growth as writing consultants.

On the form, consultants are asked to indicate the length of each session in five-minute increments; to describe, in an open text box, what the writer wanted to work on; and, finally, to choose from a dropdown menu what issues the consultant prioritized during the session.

Consultants are then expected to respond to one of two brief writing prompts about the session, one descriptive and one reflective:

> Option 1: describe [the] writer's strengths & weaknesses, the effective strategies you used, and the writer's subsequent plans for revision and/or return visits.

> Option 2: reflect on this session's interest or challenge, what you did effectively, what you might do differently in future sessions, and how this session contributes to your evolving [consulting] philosophy.

Consultants receive some training on the completion of the form. During staff meetings, new consultants review several examples of both Option 1 and Option 2 responses and then discuss the usefulness of each option: the first, for communicating about sessions and writers with other staff consultants; the second for reflecting on one's own work in a session as a means of professional growth and development. Consultants also talk about what differentiates effective session reports from less effective ones. In the case of Option 1 reports, it's usually level of detail and whether the consultant provides useful information to consultants who may have subsequent appointments with the same writer. In the case of Option 2 reports, it's clear that these reflections must go beyond description to provide some self-examination on the part of the consultant: not only a description of what happened in the session, but also an examination of the consultant's role in it and what they might do differently next time.

The goal for the Sweetland Peer Writing Center's Voyant analysis of the consultants' language used in client report forms is to understand the ways in which consultants think about their work and, in particular, to understand how the language they use represents their attention to their growth in their role as consultants, including their ability to self-evaluate and self-coach. Drawing on this focus, University of Michigan used Voyant tools to examine the language around these two sets of responses separately. The corpus created had a total of 502,492 words. The responses to Option 1 consisted of 366,589 words, while the responses to Option 2 consisted of 135,903 words. Table 2 contains a summary of the counts for the top twenty most frequently occurring terms in the corpus and in each document, as well as the relative frequency (per ten million words) in the document.

Table 2

Top Twenty Words in University of Michigan Corpus

Corpus term	Count	Option 1 term	Count	Relative frequency	Option 2 term	Count	Relative frequency
1 paper	4001	paper	3142	8570.906	session	1031	7586.2935
2 writer	3980	writer	2962	8079.893	writer	1018	7490.6367
3 essay	2578	essay	2072	5652.1064	paper	859	6320.6846
4 wanted	2195	wanted	1705	4650.9854	really	560	4120.586
5 session	2106	ideas	1675	4569.1494	think	550	4047.0042
6 ideas	2055	talked	1509	4116.3267	writing	530	3899.8403
7 thesis	1693	thesis	1393	3799.8958	essay	506	3723.2437
8 talked	1687	argument	1257	3428.908	wanted	490	3605.5127
9 really	1666	make	1162	3169.7625	like	428	3149.305
10 argument	1527	came	1135	3096.1104	time	427	3141.9468

Corpus term	Count	Option 1 term	Count	Relative frequency	Option 2 term	Count	Relative frequency
11 make	1502	really	1106	3017.0027	just	382	2810.8284
12 writing	1480	good	1093	2981.5408	ideas	380	2796.1118
13 came	1352	session	1075	2932.4392	work	347	2553.2915
14 good	1319	sentences	1061	2894.2495	make	340	2501.7844
15 worked	1235	worked	1040	2836.9646	consultation	326	2398.7695
16 read	1220	writing	950	2591.458	questions	309	2273.6804
17 just	1206	read	946	2580.5466	felt	305	2244.2478
18 sentences	1198	sentence	876	2389.597	thesis	300	2207.4568
19 think	1140	draft	840	2291.3943	help	291	2141.2332
20 time	1120	just	824	2247.7488	lot	285	2097.084

In terms of understanding the language that consultants use to describe their work—and the ways in which this language differs between client report forms written to describe a session to others and those written to reflect on one's own effectiveness in a session—Table 2 provides some clues. For instance, it might be important that the most frequent word consultants use in Option 1 is *paper* while their most frequent word in Option 2 is *session*. While the relative frequency of *session* in Option 2 is below that of *paper* in Option 1, *paper* occurs relatively less frequently in Option 2 reports: the words consultants use most frequently in those reports are *session* and *writer* rather than *paper* and *writer*. The preferential use of *session* suggests that consultants may be reflecting on those consultations differently from the way they describe Option 1 sessions, with an emphasis on the success of their interactions with the writer during the session as a whole, rather than an emphasis on the work done on the paper.

Using the Contexts Tool in Voyant to look at the term *session* more closely allowed University of Michigan to interrogate whether, in fact, consultants' discussions of sessions are more holistic and focused on interactions with the writer. Four hundred occurrences of the use of *session* were analyzed in the Option 2 texts (see Table 3), plus the ten words surrounding them on each side. Each occurrence was then classified into one of several categories: *affective*, *description*, *writer evaluation*, *session evaluation*, and *learning*. Of the 400 uses of *session*, 171 of them were coded as *affective*, meaning that the consultant expressed some sort of affective response to the session or some aspect of the session, including: "challenging," "interesting," "confusing," "awesome," or "frustrating." One hundred eleven were coded as *descriptive*, a neutral explanation of what happened during a session, a strategy used, or a writer's behavior. Fifty were coded as *learning*, meaning that consultants made an observation about the session that could be used to inform future sessions—sometimes expressed as a regret ("I should have") but also as a confirmation ("this session really showed me that") or a direct response to the

prompt ("this session contributes to my evolving philosophy"). The remaining sixty-eight uses of *session* are evaluative, either of the consultant's own performance, the session overall, or of the writer, either as an expression of the consultant's perception of the writer's response to the session or of the writer's behavior.

Table 3

Occurrences of the Term "Session" in University of Michigan corpus

Context of *session*	Number of occurrences
affective	171
descriptive	111
learning	50
session evaluation	43
writer evaluation	18
self-evaluation	7
total	400

This closer look at the contexts in which consultants discuss their sessions—their feelings, their perceptions, and what they learn—indicates that at least some consultants, some of the time, are indeed using the Option 2 reflective client report form to become their own teachers. Guided by the prompt, consultants are willing to consider what makes a session particularly challenging or interesting, frustrating or fulfilling. Many are willing to evaluate the effectiveness of the session. But there are also areas in which consultants might improve their capacity for reflection. Relatively few occurrences extrapolate from consultants' affective experiences in sessions to what they are learning from them. And even fewer mentions of "session" appear in contexts that indicate that consultants are willing to engage in self-evaluation, to critique their own performance in a session, and thus to learn from it.

Even this small analysis points to some directions for future consultant training. In University of Michigan's training program, as in many, reflection-on-action (Schön) is an important component. But it may be that we as administrators fail to indicate in a robust way what is meant by reflection and what its value is for writing center practitioners. Moreover, the relative lack of self-critical reflection may suggest that consultants maintain a perception that the goal of writing and reading client report forms is surveillance or evaluation, rather than growth. A growth-oriented approach to client report forms can be encouraged in training, by explaining the cognitive impact of reflection itself and encouraging its usefulness in helping consultants to learn from mistakes as well as successes as they develop a strong repertoire of tutoring skills.

3.3 Texas A&M University Data Collection, Candace Hastings

The intrigue of corpus analysis resides in the discovery process. Using the tools of Voyant, the data are shown in ways that provide clarity and insight, like looking through a prism and seeing the dispersion of light into separate colors. In looking at session notes from the Texas A&M University Writing Center, *flow* was the most eye-catching term. Flow is frequently used by clients to describe what they want to work on in sessions. However, as often as the term is used in TAMU's writing center, there has been no exploration of what clients really mean when they say they want help with flow. It is a term that is simple enough to understand and yet complex enough to misunderstand. Therefore, this analysis of session notes focuses on the term *flow* to explore ways clients and consultants negotiate flow talk in their writing sessions and to suggest that flow is a concept in writing studies meriting more attention and research.

To assemble the corpus, session notes were pulled from December 2008 to December 2017, for a total of 57,004 session notes. Although that data set provided a longitudinal view of the notes, this analysis used data from the past two years to get a sense of the writing center's more recent practices. Session notes were pulled from January 2016 to December 2017 for a total of 17,024 notes from face-to-face, online paper submissions, video consultations, and classroom workshops. The session notes were then uploaded as a single document to Voyant and then analyzed using the Cirrus Tool.

The Cirrus Tool in Voyant automatically excludes frequently occurring terms, such as articles and other common words. The Cirrus Tool displays a selected number of top terms (in this instance, 45) found in session notes (out of 22,954 unique word forms). However, there were other frequently occurring common terms in the Cirrus Tool, such as numbers, salutations, or location acronyms. Therefore, the following eleven terms were manually added to Voyant's excluded word list: *paper*, *pm*, *uwc*, *howdy*, *hi*, *http*, *owl*, *hey*, *today*, *00*, *04*. Session notes at Texas A&M University are often shared with clients, either as proof of attendance or in the case of asynchronous online sessions, and in uses of the term *howdy*, they are also contextual, based on dialect and culture.

After culling the common terms, the resulting visualization of the top 45 terms in the corpus as displayed in the Cirrus Tool is shown in Figure 4.

Figure 4. Cirrus visualization of top 45 words in corpus.

Table 4 is a list form of those same top 45 words captured in the visualization, along with the frequency of their occurrence in the corpus. Words suggesting the "what" of the consultation were used as a starting focal point as a way to categorize and make more sense of the terms. The "what" of a consultation was determined through nouns focusing on components of a text while excluding words that qualified the text (such as *good* or *errors*) or helped describe the process (such as *time* and *work*).

Table 4

Top 45 Words in Texas A&M Session Notes

Term	Number of occurrences (in ascending order)
making	2833
questions	2914
structure	2926
ideas	2969
good	2971
just	2995
flow	3081
went	3085
noticed	3107
errors	3108
thesis	3129
paragraphs	3143
best	3467
look	3508
overall	3570
helpful	3583
use	3600
focused	3643
word	3689
hope	3818
content	3826
like	3862
center	3897
organization	3944
paragraph	3982
wanted	4173
sure	4199

Term	Number of occurrences (in ascending order)
discussed	4228
time	4242
sentence	4320
looked	4349
essay	4431
issues	4646
session	5019
help	5382
document	5434
sentences	5885
make	6021
read	6754
talked	6824
came	6996
work	8334
comments	8823
grammar	9115
writing	13362

The most frequently occurring terms were not surprising given the general vocabulary of tutoring, and the occurrences could have been predicted based on our practices and client entry surveys. For example, the term *grammar* was used 9,115 times in the session notes. Since *grammar* has no other forms, it looks deceivingly prominent in the Cirrus view. Looking at the term list, however, allowed the examination of multiple forms of a common term. As shown in the figure above, when the terms *sentence* and *sentences* are combined, they occur 10,205 times in the notes, and *paragraph* and *paragraphs* combined occur 7,125 times. However, examining the use of the term might reveal how the term was used in the notes and suggest other unexplored avenues of inquiry.

Since Cirrus only provided one way of looking at the terms, the Context Tools in Voyant were used to see if contextual clues could reveal how the term was used in the notes. In the Contexts Tool, the data are parsed into the five-word phrase on the left of the term in one column, the term in the middle column, and the five-word phrase to the right of the term in another column. Table 5 shows a sample of the results of this context tool search. The

consultants often echoed the clients' requests in the entry survey, exemplified by phrases such as "as you requested."

Table 5

Context Tool Sample Result for the Term "Grammar"

Five words before the term	Term	Five words after term
you requested, I focused on	grammar	The main issues I noticed
this afternoon. I focused on	grammar	and organization, as you requested
you're looking for help with	grammar,	so this was my primary

The Context Tool results also suggests that clients requested help with grammar in concert with other concerns. For example, the session notes contained 3,530 instances of the word *flow*. Although terms such as *organization* and *structure* appear even more frequently, *flow* is frequently used to describe client concerns, and yet writing handbooks ignore the concept of flow or substitute terms such as *cohesion* or *coherence*; this phenomena is seen, for example, in the index of *A Writer's Reference, 8th edition*: "Flow (coherence), C: 51-56" (Hacker & Sommers, p. 20-Index). Neither *cohesion* nor *coherence* made the top 45, even though many consultants are familiar with both terms.

Table 6 shows a sample result excerpt from putting the term *flow* into the Context Tool. The Context Tool analysis shows how consultants negotiated client requests for flow in session notes.

Table 6

Context Tool Sample Result for the Term "Flow"

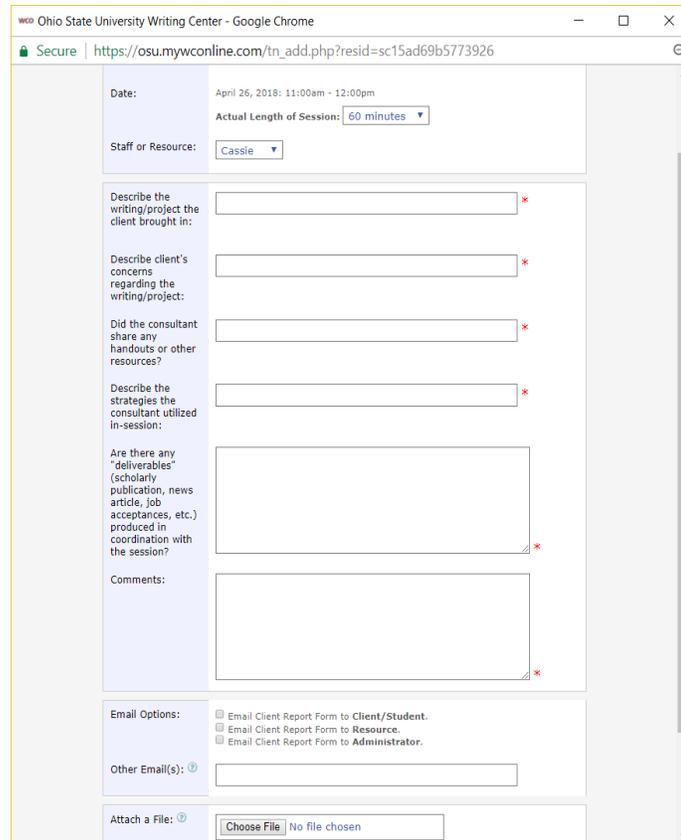| Five words before the term	Term	Five words after term
were concerned with grammar, articles,	flow	of ideas, and word choice
focus on grammar and the	flow	of his writing. During the
concerned with format, grammar and	flow	We went over trying to
read grammar, sentence structure and	flow	We began reading the line
mostly concerned with grammar and	flow	We noted numerous issues with
goal of looking at grammar,	flow	and content of her paper

The session notes revealed that the term *flow* was used in concert with other synonyms, such as *organization* and *structure*, although the notes do not address the apparent redundancy in the text. The term *flow* was not used to address the mental process of writing, as being in a flow state, in any of the notes. Rather, it was another of the "whats" of a session, like grammar. The

use of *flow* in these session notes was applied to the content of a text, to the logic of a document as a whole, to topical ideas from paragraph to paragraph, to internal structure of paragraphs, and to the sentences themselves. Clients applied *flow* to almost every component of their writing. In fact, they use seemingly overlapping terms in concert with one another, as in session note 356 of the Texas A&M data set, where a client asked for help "with organization, with grammar, and with the overall flow of her prose." To clients, then, flow could refer to all discourse moves in a text.

In contrast, writing teachers and handbooks specifically equate flow with coherence. For example, Hacker and Sommers (2015) state, "When sentences and paragraphs flow from one to another without bumps, gaps, or shifts, they are said to be coherent" (p. 51). In this definition, *flow* is a descriptor for coherence. However, clients may have a broader intent when they ask for help with flow. Little is known about what clients really mean when they use the term. If clients are using *flow* in a broader or different way, why is research so invisible in writing center research and in tutor training programs? Further analysis might provide insights on flow and how writing center consultants can best tutor for flow.

3.4 The Ohio State University Data Collection, Genie Giaimo

A number of changes were made to data collection and record keeping at The Ohio State University Writing Center beginning fall 2016. Before that point, session notes were not embedded in the scheduling software; rather, they were separately recorded and consultants had no access to them. Therefore, session notes were divorced from common tutoring practice and were filled out inconsistently and infrequently (20% completion rate in Fall 2016). OSU utilized Voyant's Corpus Terms and Contexts Tool in order to assess the efficacy of tutor training, and the role that session notes play in reflective tutor practices. Responses were reviewed from two questions in the session note form (Figure 5) collected from January 2017 to March 2018. The analysis, of Question 3, had 64,505 total words and 3,128 unique word forms. Meanwhile, the analysis of Question 6 totaled 488,243 words and 9,678 unique word forms. Together, the data set analyzed was roughly 550,000 words, collected from over 7,000 session notes. What follows is the analysis of key terms and collocates from Question #3, "Describe the strategies the consultant utilized in-session," and from the open-ended "Comments" Question, #6.

Figure 5. Ohio State University client report form.

Although OSU began the study by trying to incorporate session notes into everyday consultant practices, through training and assessment, the Voyant analysis revealed a number of other more targeted and, possibly, impactful findings. The first is that there is a potential discrepancy between consultant training and reported consultant practices, with the former focused on multimodal consulting activities and writing-focused tasks while the latter is more dialogic and talk-based. The second is that consultants enact emotional negotiation in their sessions. The invisible labor that consultants perform during their writing center work might account for the over-reliance on talk-based strategies among consultants, or it might indicate an imprecise language for describing tutor practices.

After analyzing the top 20 terms (Table 7) that consultants use to respond to the question "Describe the strategies the consultant utilized in-session," it appears that the OSU WC is heavily focused on oral forms of communication; nine total combined terms (Table 8) all refer to talk-based strategies that tutors use to engage with the client (7,672 total words from stemmed and combined phrases with a normalized frequency of 1,189.34). Only six terms refer to tutoring strategies that are writing-focused/non-talk-based (2,578 total words with a normalized frequency of 399.65) (Table 9). Not only are the five most frequent terms all talk-based, but, keeping in mind normalized frequencies, talk-based strategies are mentioned three times more

than non-talk-based strategies. (1,189.34 compared to 399.65). This is notable because of the 165 hours of training developed and conducted since Dr. Giaimo's arrival to OSU in summer 2016, less than 1/10 have featured talk-focused consulting strategies.

Table 7

Most Frequently Used Terms in Question 3: "Describe the strategies the consultant utilized in-session."

Rank	Term	Count
1	Read	1704
2	Aloud	1264
3	Reading	1084
4	Questions	1046
5	Discussion	906
6	Client	802
7	Brainstorming	564
8	Asking	526
9	Outlining	506
10	Paper	487
11	Discussed	471
12	Reverse	402
13	Comments	400
14	Point	356
15	Asked	353
16	Loud	318
17	Predict	316
18	Silently	316
19	Consultant	312
20	Grammar	303

Table 8

Talk-Based Strategies in Question 3: "Describe the strategies the consultant utilized in-session."

Talk strategies	Read/ Reading	Aloud/Loud	Questions	Discussion/Discussed	Asking/ Asked
Count	2788	1582	1046	1377	879

Table 9

Non-Talk Strategies in Question 3: "Describe the strategies the consultant utilized in-session."

Non-talk strategies	Brainstorming	Outlining	Paper	Reverse	Silently	Grammar
Count	564	506	487	402	316	303

There are, however, some terms that are harder to classify using Voyant's Corpus Terms. For example, while *client* and *consultant* (#6 and #19, Table 7) are descriptive nouns, *comments* (#13, Table 7) is ambiguous; therefore, the term was entered into Voyant's Context Tool (Table 10). The tool's tripartite phrase separation deconstructs key linguistic features of the notes and puts them in linguistic context. The noun *comments* has multiple meanings; it can refer to instructor feedback on client writing, or it could be a short-hand for referring readers to the open-ended comments question in the client report form for details.

Table 10

Context Tool Sample Result for the Term "Comments" from Question 3: "Describe the strategies the consultant utilized in-session."

Five words before the term	Term	Five words after term
questions, discussion, it's complicated, see	comments	point predict, side shadowing, give
had concerns, point-predict, see	comments	annotated feedback, collaborative revision, reading
ended questions in those margin	comments	feedback letter, see below using

The open-ended comments question (#6) was then analyzed in order to drill down on the details of what occurs in-session. This question yields a much longer response than the tutoring strategies question (488,243 total words, versus 64,505 words). Within the total word frequencies (Table 11), talk-based terms all occur in the top ten word frequencies, while non-talk terms occur within the top 15 phrases, which indicate that writing activities are taking place in the center,

though by individual term analysis it appears talk strategies are more common. Many of these findings seem to align with the results from the question on tutoring strategies (Tables 7-9). However, by aggregated word frequencies, non-talk-based strategies are referenced slightly more often (8,685 times/normalized frequency of 177.88, Table 12) than talk-strategies (7,298 times/normalized frequency of 149.47, Table 13) in the data set from the comments Question #6. Thus, consultants respond to the comments question differently, as evidenced by the discrepancy in corpora lengths, for both questions, as well as the differences in normalized frequency between talk-based and non-talk based strategies for both corpora/question responses. In the comments question, consultants describe the writing that occurs and the kinds of support that writers need more often than their tutoring strategies, though, from analyzing question #3, it may appear that consultants are mainly focused on orality. Consultants' practices and preoccupations in-session are far more nuanced than tables 7-11 suggest.

Table 11

Most Frequently Used Terms in Question 6: "Comments" Section

Order	Term	Count
1	Client	5544
2	Paper	3745
3	Session	2375
4	Talked	2197
5	Wanted	1904
6	Discussed	1829
7	Read	1742
8	Writing	1727
9	Questions	1530
10	Ideas	1492
11	Statement	1418
12	Paragraph	1396
13	Thesis	1346
14	Make	1324
15	Grammar	1306
16	Asked	1201
17	Time	1178

Order	Term	Count
18	Help	1170
19	Worked	1150
20	Went	1095

Table 12

Non-Talk Strategies in Question 6: "Comments" Section

Non-talk strategies	Writing	Ideas	Statement	Paragraph	Thesis	Grammar
Count	1727	1492	1418	1396	1346	1306

Table 13

Talk Strategies in Question 6: "Comments" Section

Talk strategies	Talked	Discussed	Read	Questions
Count	2197	1829	1742	1530

However, one aspect of consulting that analyzing the comments question revealed regards the emotional labor that writing center consultants perform (9,022 words, relative frequency of 184.78, Table 14). Seven terms indicate emotional labor: managing time, building rapport, handling client demands (*wanted*, *make*, *asked*, *help*), and determining what went well in-session and what did not (*worked*, *went*) are all emotionally charged work. And, as a sample of the collocation of the term *help* indicates (Table 15), the advice that consultants offer, or the strategies they employ, might or might not "help" their clients because of interpersonal conflict, resistance, or other reasons. These results suggest that writing center consultants are acutely aware of the dual role they play as both near-peer "coach," or learning facilitator, but also "expert outsider." Clients rely upon consultants to both direct them and engage with them—and sometimes that dynamic can backfire, as collocation #4, in Table 15, suggests.

Table 14

Emotional Labor Terms in Question 6: "Comments" Section

Emotional labor	Wanted	Make	Asked	Time	Help	Worked	Went
Count	1904	1324	1201	1178	1170	1150	1095

Table 15

Context Tool Sample Result for the Term "Help" from Question 6: "Comments" section

	Collocates	Term	Collocates
1	Client needed	help	with the flow of her
2	The writing center for more writing	help	we discussed her intended meaning
3	Him what he would like	help	with and he said grammar
4	I feel like I didn't	help	all that much but we
5	It was my perception that she wanted	help	I couldn't give, and was opposed

Because Voyant offers a number of tools through which to analyze corpora, it is imperative to consider language in context (collocates) alongside keyword frequencies. From analysis of the question on consulting strategies, it appears that consultants over-rely on talking strategies over writing ones. However, the comments question reveals a more nuanced view of tutoring practice and reflection, including that: 1. Consultants are keenly aware of clients' writing needs and are working to meet those needs through talking and writing strategies and 2. Emotional negotiation frequently occurs in-session. Therefore, talk-based strategies might be employed by consultants for the following reasons:

1. To move away from the directive, more expert role that they are called upon to inhabit.
2. To lighten the cognitive demands that flexible tutoring strategies require.
3. To disarm emotionally charged sessions.

Or, perhaps consultants simply do not have a robust enough language with which to describe their tutoring practice and therefore default to orality to describe what they do in-session. Whatever the case, as we move forward with our trainings each semester, The Ohio State University Writing Center now has some easily accessible data and data analysis tools with which to assess consultants' practice and the information that they prioritize in their session notes when describing their work; this kind of assessment can contribute to the development of more intentional training and consultant support programs.

4.0 Conclusions

As each of the case studies in this article has demonstrated, analytical tools such as Voyant provide broad insight into the work of individual writing centers, from understanding patterns in the content focus of sessions to understanding the multivalent uses of one keyword. A wide variety of different questions about the language of session notes is answerable by tools like Voyant, including the ones that matter most to us as directors of our local centers.

In Joseph Cheatle's analysis, we see how Voyant can be used to interrogate the ways in which a writing center philosophy focused on global composing issues is embodied, or not, in the session notes. While writing center directors may believe that we effectively convey our values to our staff through mission statements, training, and ongoing mentoring, analytical tools such as Voyant allow us to test these assumptions against another reality: the language our staff members use to describe their work to themselves and to their clients. Do our consultants see their work in the way we do? How do the pragmatic needs faced by college writers call into question our conventional writing center ideologies? And how might we, as directors, help our staff to navigate these perennial tensions as they are represented to us through the session notes? These are questions we can address more thoughtfully and reflectively, if we are able to see the language used to embody them more clearly and more extensively.

Corpus analysis similarly allows writing center directors to uncover ways in which specific tutoring strategies get enacted in the writing center, and how frequently writing center consultants implement these strategies in their sessions. Genie Giaimo's analysis provides insight about the ways in which writing center consultants consciously articulate their use of specific strategies learned in their training, both around the completing of forms and around tutoring strategies, by looking at the terms tutors use in their session notes to describe their work with writers. If one of the goals of tutor training is to give tutors not only procedural knowledge but also conceptual knowledge about writing center work, it makes sense to look at whether their language about their sessions reflects the language of their training. Are they, as emergent writing center practitioners, developing the capacity to engage in the writing studies/writing center discourse community? And how might we, as directors, help them to do so?

In client report forms primarily used for internal communication and for the cultivation of reflective practitioners, such as those at the Sweetland Center for Writing at the University of Michigan, corpus analysis can provide not only a sense of the broad patterns of language consultants use to describe their sessions but also, by searching for particular words in context, reveal the ways in which consultants use client report forms for their own professional development. Words that suggest evaluation, for instance, can demonstrate consultants' judgment—often of writers' work but sometimes of their own effectiveness as consultants. The identification of writers' particular strengths and weaknesses in client report forms can help fellow consultants scaffold and support writers' development over time—and searching for particular words in context that indicate a longitudinal approach to writing consultation can help consultants work as a team for writers' development.

Sometimes, the list of word frequencies generated in a corpus analysis will surface an interesting and possibly unexpected item that deserves further exploration, as it did in Candace Hastings' research at the Texas A&M University Writing Center. Exploring a single word can generate insight into the various ways that word operates in the writing center—ways that may be both predictable and revelatory. When it is a word whose meaning is both taken-for-granted and underspecified (like the word *flow*), further analysis of it may show us how a key term for writing functions in a multifaceted way. Further consideration of context for its use may also allow us to find ways to explore its meaning and function with our consultants and to consider how it may be useful and also limited, as part of the meta-language we use to describe our work in writing centers.

As all of the research here demonstrates, one of the benefits of corpus analysis is allowing us to see things we couldn't otherwise see—not only suspected patterns but also surprising revelations. Both Cheatle and Giaimo, for instance, note that they discovered things happening extensively in writing center sessions (grammar, emotional labor) that they previously were unaware of because they hadn't been able to take a broad enough view to see these patterns. On the other hand, corpus analysis can also provide information about specific words and phrases that allows us to see how they function in the discourse of session notes and writing centers more generally. Modey and Hastings used Voyant tools to drill down more deeply into keywords surfaced in the more general analysis. Here, they were able to look at these keywords in context and to understand how consultants used these words in interesting and varied ways.

Corpus analysis of the artifacts of writing center consultations does not, of course, provide a perfect lens into those sessions. For example, we cannot assume that words frequently mentioned in session reports are necessarily proportional to time spent in a consultation working on those issues or reflect the relative emphasis put on that topic in the session. There may not be a one-to-one correspondence. Moreover, a list of word frequencies generated by the "List" tool on Voyant doesn't reveal much about how those words are being used in context by consultants. For that, one must use the "Context" tool and consider the word's collocates and, more broadly, the various ways in which those collocates reveal how consultants talk about the concept represented by the word. It's also possible to use Voyant to find what we're looking for: in other words, to short circuit its capacity to reveal patterns in the natural language being used by consultants and instead use it primarily to test our hypotheses. While there is value in looking for evidence that our philosophies and our training are being enacted in the center, when we do only this, we limit the capacity of corpus analysis to teach us something new.

Nevertheless, corpus analysis of session notes, coupled with other quantitative and qualitative strategies for understanding the concrete work of writing centers, such as session observations, analyses of session transcripts, consultant interviews, client surveys—as well as rhetorical and discourse analysis of session notes—can provide us with the insights we need to support our consultants and our clients. Corpus analysis of session notes can provide us with a broad view of the ways language functions within sessions to enhance and concretize our sense of the varied work our consultants do. Without a reliable sense of what happens in writing center

consultations and how the training we provide is enacted, how our consultants conceptualize their work, and how they work with clients to improve their writing processes, as well as their current papers, we will struggle to provide appropriate support for their professional development and also to understand the "aboutness" of writing center work.

5.0 Directions for Further Research

As Haswell and Elliot (2017) note, "writing assessment is an artifact of organizational life and, as such, much may be gained by a focus on innovation" (para. 6). While writing assessment projects include cross-institutional academic-industry hybrid collaborations (e.g., My Reviewers, an NSF funded assessment collaboration among Dartmouth College, Massachusetts Institute of Technology, North Carolina State University, University of Pennsylvania, University of South Florida), writing centers have still largely situated themselves outside of networked organizational life, with the exception of Richard Hay's WCOnline, a cross-over product that many university and college writing centers utilize for scheduling and data collection. This research note demonstrates how utilizing open-source software, such as Voyant, not only helps individual institutions assess their writing centers, but also provides assessment potential that is scalable to multiple institutions. Because there are no current reference corpora for writing centers, and writing center research that utilizes corpus analysis as its method and session notes as its dataset is sparse, there is a lot of potential for adding to the existing body of research by providing reference corpora that are particular to writing center studies and the documents/artifacts that they produce. In the future, the research team will aggregate and create corpora for other institutions to utilize in their own analyses and to, perhaps, develop assessment templates for institutions interested in participating in this cross-institutional project.

While the research team plans to further explore the corpus, and create a reference corpus for other writing centers to utilize, each individual member of the research team also has plans for further research, assessment and programmatic interventions that are based on findings from this study. The Ohio State University is currently conducting a discourse analysis on a sub-set of its corpus in order to determine whether or not tutor metadata (such as level of expertise, discipline/major, and training experiences) is correlated with particular tutoring practices, styles, or attitudes. This additional analysis can lend insight into tutor training efficacy, tutor development over time, and other changes in tutors' mindsets and behaviors.

Based on findings from this study, Michigan State University Writing Center plans on implementing, and then tracking, training about spelling and grammar as a launching point to discuss more global issues; furthermore, MSU is going to encourage the completion of session notes that more accurately reflect what occurs during a session.

Texas A&M plans to use corpus-assisted discourse studies (CADS) to further unpack possible uses and meanings of the term *flow*. CADS uses corpus analysis to identify the existence and frequencies of words/phrases easily overlooked through manual examination and employs discourse analysis techniques to explore hidden or less obvious meanings of those words/phrases (Partington, Duguid, & Taylor, 2013). Understanding the nuances of how the term *flow* is used

within the specialized discourse community of writing centers can inform tutoring and training practices.

At the University of Michigan, where session notes are used as a way to communicate among consultants and as a way for consultants to reflect on their practice, a "mixed-methods" approach to session notes, such as that described by Jo Mackiewicz (2017), may allow further investigation into how consultants think about their work by providing deeper analysis of reflection-related keywords. In particular, using a reference corpus in our analysis could help us to better understand how consultants' writing in their sessions notes differs from typical academic writing and looking at n-grams could reveal even more of the "aboutness" of session notes.

Whether collaboratively or individually, it is imperative that the conversation of how writing centers impact student learning is extended. While traditionally, writing centers are thought of as places where student writers come to learn, they are also places where workers (students, staff, or otherwise) learn. By analyzing the large data sets that writing centers produce, tutor development is able to be traced, over time, and specific trainings can be identified as efficacious; in this way, we can affect tutor practice and tutor reflection. We are also able to trace whether our mission aligns with what goes on in the center and identify gaps in worker support. This kind of analysis is multi-faceted and can be used to change trainings, philosophies, and support programs. The authors want to encourage other writing centers to take up this work and to consider how text analysis tools, such as Voyant, can help to create a bird's eye view of what is occurring in the center. Other research approaches, such as discourse analysis, that are forthcoming from this research team, can help to drill down on particular findings and further extend the conversation on research about large data sets in writing center studies.

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