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"I just Wikipedia it": Information Behavior of First-Year Writing Students

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ABSTRACT
First-year writing students are a very large, diverse, and ubiquitous information user group, as writing courses are typically required of all undergraduate students, regardless of major. While in their institution's writing program, students frequently must utilize research (information) in their writing assignments. While this formal, task-related information behavior is important for stakeholders in the fields of information science and the humanities to understand, little research has been done on this significant group of students. This study arrived at key exploratory findings by collecting data and context from first-year writing students through semi-structured interviews. The researchers found that students continue to be Google-dependent and fearful of using Wikipedia, though they use it anyway. Students appear to operate in comfort and convenience zones, and distinctly prefer secondary sources which they fail to read completely. People comprise a major part of students' information seeking behavior, but students tend only to consult friends and family members. This study offers practical implications of these behaviors which may be used to help students and inform further research.

Keywords
Information seeking behavior, undergraduate writing students

INTRODUCTION
Human information behavior involves many complex factors: people's information needs, the context of the information needs, how people seek information, their formal and informal information collection, and what they do with the information (Fisher & Julien, 2009; Case, 2007). Information behavior is fluid and context-dependent (Boyd, 2004; Attfield, Blandford, & Dowell, 2003); different user groups exhibit different information seeking behaviors (Boyd, 2004). Freshman writing students comprise an information user group which is very large, diverse, and, most notably, ubiquitous. What makes the user group so large and diverse is that freshman writing courses are typically required of all students, regardless of major. Very frequently, while in their institution's writing program, students must utilize research in their writing assignments. This fact also makes this group a particularly compelling group to study in terms of information, since their classes, in many ways, are representative of their campuses and undergraduate information user group as a whole. While this formal, task-related information behavior is important for the fields of information science and the humanities to understand, little is known about freshman writing students' information behavior.

The first required writing course for college students goes by many names: first-year composition, freshman composition, freshman writing, first-semester composition, university writing, introductory writing, basic writing, and other variations. Some first-year writing courses require students to research, some do not. Beyond the first-year writing course or courses, institutions of higher education often require one or more additional writing courses, often referred to as second-year composition, second-year writing, or advanced writing courses. This paper defines university writing courses as required introductory writing classes aimed at teaching incoming college and university students to write in formal and/or academic modes. Instructors often expect undergraduate students to find and use information for assignments. With digital information resources such as digital libraries, web sites, and blogs playing a more prominent role among all unique information user groups, it is important that researchers and practitioners understand the new role of digital information seeking among undergraduate writing students in addition to the contemporary face of their non-digital information seeking behaviors. This study investigated how writing students arrive at the information they use in their papers, where they students go for information online, and why they keep the information they use in their papers.

GUIDING RESEARCH QUESTIONS
The research questions guiding this study are: 1) Where do undergraduate writing students go for information? 2) How do undergraduate writing students arrive at information sources? 3) How and why do first-year composition

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students use their favored sources of information and neglect or choose not to use other sources of information?

BACKGROUND

Given that most institutions of higher education require one or more writing courses of all students, undergraduate writing students form a major information user group across institutions, but a group which little is known about (Howard & Jamieson, 2011), especially as it relates to the rapidly expanding role of digital information. The body of research on the information seeking behavior of undergraduate students suggests that studying the way students find information is essential to understanding them as a user group, helping them find research more effectively and efficiently, and developing resources for their use. It may be that additional research can inform resource developers, academic librarians, and writing instructors in their respective practice in assisting undergraduate students. In short, freshman writing students are a vast, omnipresent information user group, and the body of research on their information behavior is impressively limited: their instructors are essentially teaching students information skills unguided by any empirical understanding of their students' context. In this section, research from the disciplines of information science and the humanities is presented to offer as complete an understanding as can be constructed from the existing literature. Research in the information sciences offers insights into undergraduate students' information behavior; research in the humanities offers insights into the unique nature of freshman writers' work in their composition courses.

UNDERGRADUATE INFORMATION SEEKING

Students choose sources they are comfortable and familiar with (Warwick et al., 2009; Twait, 2005; Lee, 2008). Students rely on prior exposure to both specific resources and source types to accomplish information tasks (Twait, 2005). These familiar resources can be physical, digital, and even personal−friends and family, for instance (Nichols & Mellinger, 2007). Studies somewhat disagree, however, on the exact nature of their trusted sources for information. Fescemeyer (2000) found that students in a guided library research environment mostly used print sources to complete a researched examination they were working on. It seems probable that the time frame of her study (1997-1998) could be part of the reason for this, and also the fact that the instructional research session had an emphasis on print materials. In her qualitative study, Twait (2005) found that students were approximately evenly split between searching for information digitally and physically, and that consulting people−whether friends, faculty, or librarians−was infrequent if not altogether absent. Interestingly, lowerclassmen in Twait's sample tended to use physical sources of information, while upperclassmen preferred electronic sources. In a study from the same year, Callinan (2005) also found that students strongly preferred physical information sources, but hypothesized this was due to students' lack of knowledge that digital resources were available to them. The study was also conducted outside of the United States, in Ireland, and this factor may have some influence on the students' information seeking behavior as well. The sample of lowerclassmen in Karas' (2007) study preferred digital information resources. Karas found the same phenomenon of bypassing interpersonal information resources—primarily faculty and librarians—as Twait did. Ultimately, the majority of studies reveal that students prefer digital sources (Lee, 2008; Fescemeyer, 2000 and Pew Internet and American Life Project, 2002 in O'Brien & Symons, 2007; Karas, 2007; Kibirige & DePalo, 2000), very often using search engines as their starting points (Kibirige & DePalo, 2000). The reason for this digital preference, across studies, appears to be familiarity and convenience or perceived efficiency. Students also appear to consult their peers during their information seeking pursuits, and do so more often than consulting faculty and librarians (O'Brien & Symons, 2007; Baro, Onyenania, & Osaheni, 2010). These disagreements may be due to students' varying fields of study, but this variable is infrequently specifically investigated in this literature (Chai, 2007).

In tandem with students' preferences for familiar sources and ways of getting information, resistance to new ways of searching is common in this literature. Students will fastidiously avoid specific information resources, such as library databases, electronic journals indices, and even certain people (typically faculty and librarians) (Nichols & Mellinger, 2007; Twait, 2005; Lee, 2008; Karas, 2007). Lowerclassmen resist learning new search skills, but appear eventually to learn new techniques, since studies of upperclassmen and graduate students show more sophisticated information seeking behavior (Warwick et al., 2009; Twait, 2005, Callinan, 2005). Additionally, students' fields of study affect their information seeking behavior, further warranting the need for studies of key specific user groups such as writing students. Heinstrom (2005) found that undergraduates' information seeking styles could be described specifically as "fast surfing," or quick, superficial information seeking, "broad scanning," or broad, far-reaching searching, and "deep diving," or strategic seeking.

Undergraduate students are a convenience-oriented group of information users (Timmers, 2010; Warwick et al., 2009; Lee, 2008; Kim & Sin, 2011). Warwick et al. (2009) somewhat humorously described the behavior of their sample of undergraduate students this way: "Our students did not necessarily complete their information tasks but deployed considerable ingenuity in finding ways to avoid or limit complexity." Indeed, undergraduates seem to confine themselves in their information seeking out of perceived ease and convenience, but do so in interesting and even clever ways (Lee, 2008; Kim & Sin, 2011). Students are highly economical with their investment in their information searches, both with what they search for, and when they choose to stop searching for information (Warwick et al., 2009; Timmers, 2010; Twait, 2005). As

novice information seekers (Kibirige & DePalo, 2000; Karas, 2007), undergraduates are less likely to be persistent in their searches, have less varied search styles and source types, and less frequently reformulate their searches if the initial results are inadequate (Warwick et al., 2009). They also tend to stop their searches when they feel they have enough information−typically just a few sources−rather than gathering, reading, and evaluating a large body of information on a topic and then selecting the most relevant information from it (Warwick et al., 2009). In choosing this relevant information, undergraduates rely heavily on perceived alignment between their topic and a source and recognition of key names and/or terms (Twait, 2005; Lee, 2008).

Besides evaluating their sources for topical and content connections, students demonstrate distinct information evaluation strategies. Twait (2008) found that undergraduate students' top criterion for finding a source useful was perceived content (students did not seem to read a source in its entirety before making these decisions), followed by familiarity with where the resource is housed (a website or database, for example). Other prominent criteria (in order) were reputation or credibility; convenience; and format, type, or genre. Lee (2008) arrived at similar findings: students evaluated the information they came across in their searches on the criteria of quality or credibility, target audience, and content relevance. Kim and Sin (2011) studied both students' selection criteria and the characteristics of the sources students actually used. They found students' criteria to be accuracy and trustworthiness, ease of accessibility, ease of use, cost, and currency. The characteristics of sources students actually used were ease of accessibility, cost (whether the resource is free or not), familiarity, ease of use, and content comprehensiveness. These findings and any extensions thereof in future research may help higher education faculty and librarians to improve students' information literacy skills in general, and more specifically, their source evaluation skills.

The research suggests that information seeking behavior is most strongly influenced when taught or guided within the context of a particular class, rather than when offered in a generic or overarching format (Long & Shrikhande, 2005; O'Brien & Symons, 2005; Callinan, 2005). Students' information seeking is more positively impacted by continuous information literacy instruction over time rather than single-contact models. Some of undergraduate students' information seeking behaviors may be explained by the information literacy instruction (if any) they have received, however, it is not fully clear from the literature what other impacts information literacy instruction has on students' information seeking behaviors.

One research article worth noting separately is Attfield, Blandford, and Dowell's (2003) framework for understanding information seeking in the context of a problematic situation, specifically, in writing. This article is the only one which directly addressed both information science and writing traditions in a single piece. However, the authors also include discussion from the area of design psychology, and discuss writing in terms non-specific to a particular user group, so the article does not represent the quintessential bridge between the information seeking behavior literature and undergraduate writing. Furthermore, the article is not an empirical investigation but a conceptual framework. The article is, however, a large step in the right direction, since information behaviors and writing are, in conjunction, so little-studied but so in need of understanding.

WRITING STUDENTS' INFORMATION SEEKING

Despite being fewer in number than information science articles on undergraduates' information seeking behaviors, conceptual and empirical articles published in the areas of writing and composition research reveal further insights regarding the information seeking behavior of undergraduate writing students. In 1998, Sorapure, Inglesby, and Yatchisin wrote on whether or not web sources should even be permitted in writing assignments, ultimately arguing that they could be valuable; the literature has come a long way since then, recognizing the role of the Internet in students' information seeking for their papers.

As in the body of information science literature, writing researchers suggest contextualized information seeking instruction has the most impact on information seeking behaviors (Corbett, 2010). While the proposed research in this prospectus does not seek to experiment with any particular information literacy instruction, it is expected that some, if not all students, will have been taught something about information literacy. This factor is something that may influence the data in empirical investigation in this area. Corbett (2010) describes his case study of a "stage-process" instructional approach to benefitting writing students' information seeking behavior. His subject demonstrated positive changes in her information seeking behavior as a result of the stage-process intervention. Gavin (2010) similarly advocated a process-based model for enhancing undergraduate writers' information seeking behavior. Despite these arguments, the fact remains that such models for assisting students with their information seeking have been anecdotally investigated rather than empirically investigated. While theory is often privileged over scientific evidence in the humanities and especially in English, empirical findings could help confirm or refute these approaches and their usefulness across the population of students.

Researchers in this area, furthermore, have pointed to the prominent role of students' evaluation criteria for sources they encounter in their searches for information. While students have clear and distinct evaluation criteria, they are not always useful or productive, and may even be problematic (Burton & Chadwick, 2000). Sidler (2002)

argues that helping writing students improve their information seeking behavior involves specific ways of guiding and shaping their evaluation criteria. Burton and Chadwick (2000) conducted an empirical investigation of writing students' information search patterns and their information evaluation criteria. Their research, too, arrived at the conclusion that it is in the hands of faculty and librarians to assist writing students in the formation of good evaluation criteria for the sources they encounter. Both articles suggest that left unassisted, writing students will fail to use sources to their greatest advantage, even using them irresponsibly. Howard and Jamieson (2011) suggest that to prevent source-use indiscretion and even plagiarism, further research is needed on writing students' information behaviors, and it seems clear from this limited body of research in writing that while the foundations are being laid, there is much more work to be done before fully informed recommendations can be made.

METHODS

This study employed a qualitative method of data collection and analysis. Given the limited empirical understanding of freshman writing students, naturalistic methods were selected as the best way to gather exploratory data which would include not only students' search and use processes, but also the context of their behavior in their pursuit for information. The researchers gathered data through semi-structured interviews of eleven questions given at two large public universities in the United States. Students at Institution #1 were recruited by contacting an instructor in the English department by e-mail, who then advertised the need for participants verbally in one section of first-year writing. Students at Institution #2 were recruited by e-mail by their instructor, one of this study's researchers. At both institutions, students were offered a nominal amount of extra credit, with additional opportunities for extra credit existing in both classes. Eleven students volunteered to participate, five at Institution #1, and six at Institution #2. To preserve as much of the instructional and task-orientation context as possible, all interviews were conducted on students' respective campuses. All interviewees were white; seven were male and four were female. The interviews were conducted one-to-one in a private room, with one researcher interviewing one student, and the other researcher observing the interview via Skype (videoconferencing software) and asking any relevant follow-up questions at the end of the interview. Students were aware of the second researcher's presence. Interviews were audio-recorded to document interviews in their entirety and to facilitate future transcription. Each interview lasted approximately thirty minutes. As of the writing of this paper, all data have not yet been fully transcribed, however, the transcription process has begun, and interviews were reviewed in full and coded thematically by the researchers.

Thematic analysis was employed to analyze students' responses to the interview questions (Boyatzis, 1998). The researchers reviewed the eleven interviews, all of which were included in the final data set, and developed a coding scheme based on emergent commonalities and differences among data sources. Future work with this data will focus on the full transcription and further coding of the interview data. This research report on first-year writing students provides important exploratory findings for these minimally explored but widely present information users and their information behavior. Due to some differences in usage of terminology between the humanities and information sciences, this paper defines "resource" as an encompassing source of information, such as a search engine or a database, and a "source" as a single published genre or piece of information such as a journal article, book, or webpage.

FINDINGS

The "Google Generation" Strikes Again

Rowland et al. (2008) define the "Google generation" in the following terms: they are born in or after 1993, and they tend not to recall a life free of the Internet and modern digital technologies. This study's data reinforce Rowland et al.'s findings that the Google generation is heavily reliant on search engines, especially Google, for finding information. Common to all students participating in this study was the use of Google as one of the first, if not the very first, place they would go to find information.

Students were also very unified in their reasons for using Google as one of their primary resources for information. One student summarized students' responses well: "Quick. Convenient....I can find whatever I need through Google" [Student #7]. He went on to describe, as many other students did, that he was aware that there were other ("more scholarly," as Student #6 put it) ways to find information. However, students explained that Google was the most efficient method for locating the kind of information they needed to use for their undergraduate writing courses. Additionally, students voiced the sentiment that they felt their current information seeking behavior was adequate. "Right now, Google's working for me, and I'm not, uh, as smart, you know, with different databases and search engines as I wish I could be, so Google, right now, just works for me" [Student #7].

The Information "Comfort Zone"

The first-year composition students in this sample described thorough utilization of relatively few information resources, that is, they would exhaust their searches in their known options for information rather than look for new places to find information (Timmers, 2010; Warwick et al., 2009; Lee, 2008; Kim & Sin, 2011). This exhaustion of their resource was likely to students' perception only, however, as several students admitted there was probably more information on their topic in the source, but they were unsure of how to locate it [e.g. Student #6]. Students in this sample used a relatively limited repertoire of information resources: Google, news websites, friends and family, class

notes, and select databases through their school library website, appearing to represent a distinct "comfort zone" in which they operated. Only a couple students reported using printed information (e.g. books, magazines, or journals) or librarians in their information seeking processes. Students tended to describe a linear process through selected resources for information, starting at their preferred information resource–almost universally Google–and proceeding to the next favored resource when no more satisfactory options could be found [Student #1, Students #3-11]. This process of exhausting an information resource, then moving on to the next one was similar to another behavior into which students gave insight: when they felt like they had enough information (usually, the minimum number of required sources for a paper), students simply stopped looking for information. This latter behavior seems as much a matter of convenience or efficiency as what they are comfortable with doing, however. Students in this sample did as little work as possible to complete required researched writing tasks. Their behavior might be described by a line from Lewis Carroll's *Alice's Adventures in Wonderland*: "'Begin at the beginning,' the King said gravely, 'and go on till you come to the end: then stop.'"

With the exception of Google, information resources in students' comfort zones also strongly tended to have been learned in school. When asked where they learned about Google, students were unable to furnish concrete responses, and many settled on responses similar to Student #10: "I feel like Google was just, was always there." However, she acknowledged an academic component to Google's omnipresence in her information behavior: "When the teacher told you to search something, it would be, 'Just go to Google'" [Student #10]. Once again, Google proved to be inextricably enmeshed in students' lives and information seeking behavior.

Possibly the most interesting and confirming cases of this "comfort zone" information behavior came when students described their use of subscription databases available through their respective universities' library websites. Students described having been introduced to various databases in high school or first-year composition courses, but they universally described how they never ventured outside the databases they had been exposed to in those courses. Student #10 described having been introduced to the EBSCOHost database at her university in a previous writing class, but that she hadn't attempted to locate or use other databases easily accessible through the same area of the library website until she was shown how to use them during the same semester this study was conducted. Only two students, Students #10 and #11, had "stumbled upon" Google Scholar. All other students who reported using Google Scholar did so because they had been shown how to at some point in their academic career.

Source Types and Use

Additional findings belonging to students' comfort zones relate to the types of sources students use and how far into them they read. In their landmark research study, the Citation Project, Howard and Jamieson (2011) found that first-year writing students largely used secondary sources in their papers. Howard and Jamieson also found that that striking 70.56% of the research in their sample of first-year writers' papers had been drawn from the first (47.22%) or second page (23.34%) of the piece of information (e.g. journal article, book, book chapter, etc.).

This study further explored both findings by asking first-year writing student participants directly whether they used primary or secondary sources and why (Question 9), as the latter portion of the question was outside the scope of the Citation Project, and how far they perceived they read into a source before choosing something to include (Question 8).

This study provides further evidence that students tended to use secondary sources in researched writing assignments, but not for lack of trying to work with primary sources. In fact, students expressed a preference for and a desire to use primary sources, but described the process of finding them and then understanding them difficult. Students #3 and #5 described preferring primary sources exclusively, while Student #4 couldn't describe which one he tended to use more, because he found himself "just looking for information" and not attending to its type.

The remaining nine students all described frequent secondary source use. The nature of this resource use was characterized well by Student #7: "If I look back on the papers, I tend to use secondary sources, just 'cause...I think they're the first ones I usually find. It's not that I would not want to use a primary source, it's just that....I think back to the stuff that comes up in my search engines and usually it's a secondary source. I mean, primary sources, I feel like, are those more sophisticated, more wordy ones, I just have a hard time understanding quite yet. I'll look at it, and if I can relate to it, or I can read it and use it, I will, otherwise, it's just kind of like, 'This is too much for me.'" Because secondary sources tend to be what they find when and how they search for information–as described previously, with the information sources they are comfortable with–this type of information is what they most often utilize in their papers. Primary sources, while students may have encountered them or even if they have been taught and know how to find them, feel out of reach to students. Four students in the sample described secondary sources in identical terms, as "broken down" versions of primary information. This terminology seems to suggest that students perceive primary sources as falling outside their comfort zones, in a realm of inaccessibility. Student #1 described this consideration as well. "[Secondary] tends to be the one I fall back on more...I think it just makes more sense to me, like if I was just given some kind of research,

just exactly what they said, I would...get way lost, but I think I like having it broken down and kind of interpreted." Student #9 echoed these sentiments almost exactly: "The secondary sources, as bad as that sounds, because sometimes if you read a primary, you won't understand the language, or the lingo that they use. So, I like to use a source that broke it down already, so I understand it."

First-year writing students do not appear able to engage with primary sources in the ways instructors seem to expect them to. The academic vernacular, in particular, appears to present a significant obstacle to their perceptions and use of this type of information. Student #8 reported using both primary and secondary sources, but went on to describe how she used the "summaries" (abstracts) at the beginning of primary sources. Students' use of secondary sources appears to be closely related to a preference for using search engines, especially Google, to find information.

Last, the degree to which students engage with the information they choose was further explored by this study (Twait, 2008). As mentioned previously (Howard & Jamieson, 2011), students largely appear to incorporate research drawn from the first two pages of the source material in their essays. This suggests only a couple of things: students are using very short sources of information, and/or they are engaging with the information they find very minimally. Both of these suggestions are worrisome for key stakeholders in these students' education, such as librarians and instructors, not to mention the students themselves. When asked Question 8, students tended to respond that they would "try" to read the entirety of the piece of information, but most admitted it was a matter of the time they were willing to spend on a paper that limited how far they would read into a source before choosing something and incorporating it into their papers. Student #4 described some of the limitations to his ability to delve into sources. "It's just, if it's really long, I have a job, I have other homework to do, you know?" This finding is not altogether bleak, however. Students #6 and #9 both described reading sources in their entirety. Student #9 even described printing all his sources, and highlighting and annotating them.

Use and Fear of Wikipedia

Most students reported that they had explicitly been discouraged or even forbidden to use Wikipedia as a resource of information by high school teachers and/or college instructors and professors. Student #10 characterized the scenario this way: "Wikipedia's always, like, the definition is what [Google] automatically goes to, and then I'll read through Wikipedia, but everyone always says don't always trust it, depending on the teacher, and so then, I'll try and find other sources." While it appears from the data that different teachers of writing feel differently about Wikipedia, on the whole, students perceive teachers as disapproving of the site. They tend to use it in the initial stages of information seeking, but they don't cite it. Student #8 noted teachers' suggestions against using Wikipedia, and added some observations of her own. "I don't like using Wikipedia, actually, and I know it's not always a recommended source, but, I've–I read articles on different topics that I know some of the information on there isn't one hundred percent, 'cause anybody can edit it..."

As a result, students in this sample responded in one of two ways: they discontinued using Wikipedia as an information resource altogether, or employed a method which still allowed them to use the site, but to cite alternate sources. Student #9 described it best: "after I find a topic, I usually just...Wikipedia it, just to get the general information." Students in this sample often used Wikipedia as a point of first contact with a subject. They described choosing paper topics they were interested in and knew something ("a little," as Student #6 described) about, but their prior knowledge was often limited: anecdotal or directly from another class's lecture notes. Students felt that to gain a more complete perspective on their topics, reading the respective Wikipedia entries gave them the information they needed to continue with information seeking processes (Head & Eisenberg, 2010).

Funneling

When asked the second question on the interview guide, whether they tend to browse for information for essays or go in search of something specific, most students described a semi-specific browsing technique. Several students responded "specific" but described something more akin to browsing with a specific topic in mind. Student #6 described his information seeking process as specific, but said, "for this last paper, it was pretty much just getting an understanding of the electoral college and then also, uh, the proportional system method....how that can be a better system." Students tended not to browse for topics for essays, instead choosing them ahead of writing and the information search process. Armed with a topic, students then engaged in browsing behavior, typically using the simplest form of their topic as (a) search term(s), e.g. "animal testing" (described by Student #10), "religion in politics," (described by Student #6) or "Johnny Depp films" (described by Student #7). Only when their central search term returned too many hits, or failed, to their perception, to turn up any more useful information, did students begin to add to or change search terms. Student #6 described an essay due earlier in the semester where his initial search term was too broad: "I put in, um, 'religion in politics,' and then, from there, I really I had to narrow it down more, because then that's just, you know, uh, that's just a huge floodgate." Students seem to find themselves treading a fine line between search terms which return search results too broad or numerous to manage, or too specific to return enough information or the type of information they expect or need. This, too, is a convenience behavior.

Student #11 summed up peers' and his own behaviors succinctly and clearly: "I tend to browse in the beginning, and then, as I get more specific in my paper, obviously, I'm going to search for more specific things to fit that exact topic." His description of this kind of "funneling" information seeking behavior also points to another finding of this study. Students in this study largely tended to select resources that supported their predetermined stance or approach to a topic, rather than letting the information they found in the course of searching shape their perspectives. Student #6 specifically described this phenomenon as well. When Student #6 was asked what would cause him to leave piece of information behind (Question 7 on the interview guide) and move on without using it, he responded, simply "If it doesn't fit the argument." All students in this sample responded in a similar way. Students also largely reported that they would keep a piece of information for a paper if it "fit," that is, if it matched the flow and perspective of the paper. If they encounter a piece of information that doesn't match, in one way or another, their predetermined perceptions, students will not consider it for use in the paper. This finding is especially interesting given the earlier finding that students tend to select topics they are interested in, but know little about. This apparent contradiction is worrying, because if this is the case, it seems clear that students are choosing sources for the wrong reasons and learning little about their topics in the process of writing essays, and instead supporting limited repertoires of knowledge with limited information found in limited resources of information (Twait, 2005; Lee, 2008).

Social Information Seeking

Certain interpersonal aspects of these students' information seeking behavior were unexpected but interesting findings of this study. Because little was known about the people first-year writing students turn to in information seeking, the term "people" was incorporated into Question 3 to try and understand more about this important part of their information seeking behaviors. Interestingly, students readily and easily discussed the people involved, and when they chose to talk to people for information, students in this sample universally went to family members and friends unless being prompted or required to contact members outside their social circles by teachers. Student #10 described the culminating project for her high school concurrent enrollment college-level English course. She had to locate a mentor, a professional in the field she envisioned herself joining in the future, to interview and gain information from. When discussing this situation further, her interviewer asked whether she would cold contact someone without being required to by an instructor, and she firmly replied that she would not; she would only contact friends and family in the course of her usual information seeking.

Students liked referring to friends and family members for a variety of reasons. Student #4 described that his family members could be trusted to know good information on the kinds of subjects he tended to write on. His brother, in particular, was a stockpile of "useless information" which he actually often found useful for his writing. The value of interviewing or talking to friends and family members seemed to lie in the type or slant of information they could gain from them. This seems to coincide with an earlier finding that students seek information that supports their existing opinion and knowledge on a subject. Discussing gaining information from other people, Student #8 stated, "You can get their different perspectives and point of views (sic), and their opinions," which were forms of information she felt were difficult to find otherwise, but which were necessary for certain types of papers, such as a review of facial treatments she was completing.

While it was expected that some of the students would consult information professionals such as librarians and library information specialists, only one student, Student #8, reported working with an information professional in the course of seeking information for her papers. Given that students tended to exploit information resources they had been taught about in academic settings, it is possible that additional guidance and instruction is needed from writing instructors to guide students to information professionals who could help them immensely in search processes (Head & Eisenberg, 2009).

Comparative Credibility

In terms of the information literacy of undergraduate writing students, participants' responses regarding methods for determining the credibility of sources were very revealing. While most students recognized they could often determine the credibility (or lack thereof) of a source by its author or sponsoring organization, they recognized there were also instances where this information was not available, or where the author or sponsoring organization were unknown to them. In these instances, students in this sample had a clear strategy. When students found a source they liked, but weren't sure whether it was credible or not, they compared it to other sources on the same topic to see if the same information was conveyed. Student #1 explained how this comparative approach worked for her: "I like to compare [the potential source] to other information on the topic and kind of see how they differ and how they are similar to each other, and, um, if I find that one website differs from another, I'll try and find another website and see which one is closely related to it to kind of see which is more trustworthy and credible." Her characterization of this method was virtually identical to other students' approaches, even across institutions. Student #11 said that he could easily determine credibility of a source by where it was published−in a book or a library database, for instance−but when it came to sources found through Google, he said, "Sometimes, I'll look for that same information, like, through something else, like, 'Okay, I think that would be able to be found on LibraryOne or something like that.'" He also described a technique unique to him where he would "Google their [the author's] name,

[and] see what pops up when their name pops up." This finding of "comparative credibility" should be a concern, because students appear to be demonstrating they do not fully know how to think critically about a source's credibility and might disregard dissenting, but credible, information in the process.

DISCUSSION

Given the uniquely task- and information-oriented nature of first-year writing students' work, and the potential to represent undergraduate populations as a whole, this study sought to lay exploratory foundations for understanding their information seeking behavior through naturalistic qualitative inquiry. While the small sample size and methodology do not lend themselves to generalizing these findings to the total population of first-year writing students or undergraduates, the findings align themselves with and expand upon existing perspectives of undergraduates and first-year writers. These findings should help key stakeholders, such as librarians, instructors, administrators, and developers of textbooks and digital products, identify important trends among this unique user group and extend research in this area. Additional research on this topic will be conducted this year using both qualitative and quantitative methodologies as part of a dissertation.

Accepting Google and Extending Students' Information Reach

For stakeholders in first-year writing students' education, it will be important to accept and know how to expand upon students' heavy reliance on Google. Since students primarily appear to have learned informally to search for formal and academic information using Google, stakeholders−especially instructors and resource developers−might consider increasing instruction and/or guidance on finding good (e.g. credible, scholarly) information using Google and search engines specifically. At the same time, it is clear that students need to be taught about where to go and how to use additional information places−subscription databases, digital libraries, etc. At present, writing students' information seeking behavior is one constrained simultaneously by a reluctance to leave their comfort zones, unwillingness to increase their investment in their search processes, and their awareness of additional information resources. Indeed, even students' choice to pick a topic and angle ahead of the information seeking process is a minimalist approach; introducing requirements that would teach and encourage students to engage in a more productive iterative approach would be worthwhile (Kuhlthau, 1991; Eisenberg & Berkowitz, 1990; Diekema, Holliday, & Leary, 2011). Such requirements could easily be incorporated into collaborative group work during class time, homework assignments, or textbook components.

Primary Source Use

Extending students' abilities with Google and other information resources will be one way to help students in their information seeking processes, but there is still more to be done. Students are likely to continue coming across primary sources and even find more primary source material as they use new, more scholarly subscription databases and digital libraries. As it stands, they are not comfortable in understanding primary information. More instruction−in textbooks, in classes−will be needed to help students to understand the academic and professional vernacular typically found in primary sources. Lessons bringing primary sources into the classroom in the form of handouts or projected documents would be simple to plan and implement, and textbook publishers could include more primary sources as readings (especially guided readings) in their texts (e.g. http://www.loc.gov/teachers/). For other resource developers such as database developers, ensuring that primary information is both available and accessible will be vital to facilitating students' use of this important type of information (Arntson, 1960).

Interpersonal Information Seeking

Some teachers and their assignments are encouraging students to exit their comfort zones (and convenience zones) in terms of using other people to get information (e.g. Student #10's mentoring professional). Also, the field has done much to lower the threshold to make information professionals more accessible to students. On the whole, still, these data show that students are still not going outside their usual social circles to obtain information. Some first-year writing textbooks (e.g. Seyler, 2009) feature a greater push for going to librarians and interviewing professionals or scholars for information, but there is still a need for more on this front. Embedding librarians into the teaching of first-year writing is an important first step. It may be helpful for instructors to model how to find scholars and professionals using search engines or institutional websites, and textbook authors and publishers could increase coverage of the ease and acceptability of consulting librarians and experts.

Limited Information Seeking

A key finding of this study was that students support their limited repertoires of knowledge and understanding with limited sources they find in a limited number of information places. All three of these areas need to be expanded if first-year writing students are to write and learn in a way that will make them successful in their academic careers. First-year writing courses, as discussed in the early sections of this paper, are designed to prepare students for communication in the rest of their college courses. Such extensive limitations to their ability to research have resounding implications. While it is outside the scope of most first-year writing courses to provide coverage of timely issues, some instruction on current events and issues will help build the first part of writing students' information seeking behavior currently constrained by limitations. Getting writing students to engage with sources beyond the first couple pages of the source will be difficult, as this is apparently more a matter of reluctance to invest the time and effort into reading and understanding sources. Giving graded assignments to students which require them fully to

read the sources they use in papers is one option for practitioners; additionally, information resource developers could offer encouragement for students to move beyond abstracts and introductions by providing very brief guides (not long enough to be used as a source itself) as to what the source contains as a whole. Suggestions have been offered previously in this discussion to help students expand usage of information resources. These three areas, strengthened as a whole, should result in a much more information-literate population of first-year writing students and, as a result, undergraduate students in general.

CONCLUSIONS

The researchers interviewed eleven first-year writing students from two large, public universities in the United States regarding information seeking behavior. The small sample size and qualitative methodology were intended to capture as much of writing students' information seeking context as possible. While it is not possible to generalize these findings to the larger populations of first-year writing students and undergraduate students, this approach provides an important exploratory snapshot into the world of this unique and ubiquitous user group for future investigators. Future research should replicate and extend these findings through repetition of this methodology, new methodologies, and larger sample sizes.

Data were collected on students' campuses, in academic buildings and rooms, and in the case of Institution #2's students, collected by their instructor. It is possible that this approach would cause students to give answers colored by their positioning in the academic setting. Future research might investigate this influence by conducting similar interviews in more informal settings and/or having the interviews conducted by their peers. A weakness of the interview guide was identified in Question 9; students should be asked what they actually tend to use in their papers rather than what their preference in terms of source type is.

In general, weaknesses in first-year writing students' information behavior appear to be heavy reliance on a limited number of information resources, constraints on students' time and reluctance to invest too much time in writing assignments, inability to generate productive searches, dependence on family and friends as information sources, and the use of basic (secondary) source types. Simple education and exposure could form a significant part of the solution to these weaknesses, but more research is needed to develop adequately complex and practical plans to assist first-year writers as the large and omnipresent group they are.

In response to the guiding research questions, the researchers offer the following preliminary responses.

Where Do Undergraduate Writing Students Go for Information?

Students in this sample largely went to the following information resources in their information seeking processes: Google, Wikipedia, news websites, friends and family members, class notes, and select subscription databases. A few students reported using physical libraries, librarians and information professionals, experts, books, and magazines.

How Do Undergraduate Writing Students Arrive at Information Sources?

For the most part, undergraduate writers arrived at information sources for their papers by using resources they had been taught about in their high school or college classes. While Google was something they characterized as so deeply entrenched in their lives that most didn't recall their first encounter with it, students distinctly remembered learning, for instance, how to interview, or how to access a particular subscription database, and continued to use those routes to arrive at sources of information. Students also arrived at sources of information primarily through browsing habits, even when they described them as "specific" searches when asked whether they browse or seek information specifically. Based on their descriptions, students tended to define specific information-seeking as simply having a topic in mind and going generally in search of related information: very few students described actually seeking a particular source type or even having particular expectations for what they would find.

How and Why Do First-Year Composition Students Use Their Favored Sources of Information and Neglect or Choose Not to Use Other Sources of Information?

Students appear to use the sources that they do because they are familiar and accessible. Once students feel comfortable using an information resource, they use it regularly and will search it until they perceive they have exhausted all it has to offer (whether or not that is actually true). Students also tend to use sources that they feel they clearly understand, and these are typically secondary sources. Students' neglect of sources appears to be a combination of ignorance and unwillingness to venture outside the information resources they are comfortable with.

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