Chapter 2

REPORTS FROM THE LILAC PROJECT
Designing a Translocal Study

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ABSTRACT
In this chapter, we describe how we used screen-capture software to understand student information-seeking behaviors in order to suggest pedagogical and curricular strategies for teachers, librarians, and others tasked with helping students develop essential research strategies. We used the pilot study to design a larger, ongoing, multi-institutional study, collaborating with other researchers to enhance the methodology and data analysis. Reflections on the methodology and findings emphasize the strengths and weaknesses of the research as well as pointing to ways in which the LILAC (Learning Information Literacy cross the Curriculum) Project could be expanded through multi-institutional studies and additional projects.

INTRODUCTION
In the foreword to The New Digital Scholar, Alison J. Head and Michael B. Eisenberg note that “one of the paradoxes of the digital age is that while finding information and answers may be easy, making sense and using all that information is not” (Head and Eisenberg 2013, xi). In that same volume, Barry M. Maid and Barbara J. D’Angelo suggest ways instructors can “think about which pedagogical strategies all of us need to employ in order to develop an [information-literacy]-based curriculum that is relevant in the digital age” (Maid and D’Angelo 2013, 310–11). In this chapter, we discuss a small pilot study of student information-seeking behaviors looking at gaps in students’ information-seeking skills in order to suggest pedagogical and curricular strategies for teachers, librarians,

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Howard IRB Application 2017 - Appendix A
and others tasked with helping students develop essential research strategies. We used the pilot study to design a larger, ongoing, multi-institutional study, collaborating with other researchers to enhance the methodology and data analysis. Reflections on the methodology and findings emphasize the strengths and weaknesses of the research as well as point to ways in which the LILAC (Learning Information Literacy cross the Curriculum) Project study could be expanded through multi-institutional studies and additional projects.

**FRAMEWORK**

Most academics agree that “writing from sources is a staple of academic inquiry” (Howard, Serviss, and Rodrigue 2010, 178). However, the Citation Project’s multisite study of students’ use of academic sources (Jamieson and Howard 2013) supports the hypothesis of the initial pilot study that many students appear to be “quote mining” the first page or two of sources instead of actually reading them (Howard, Serviss, and Rodrigue 2010, 186). Jamieson and Howard’s findings also describe the types of sources students are using, with 24 percent of sources cited being scholarly, peer-reviewed journal articles and an unsurprising 25 percent being “Web-based sources” (Jamieson and Howard 2011). One single-institution study also found a majority of student citations to be from online sources (Barratt et al. 2009), and another single-institution study showed almost half (or 48 percent) of sources to be from web sources (McClure and Clink 2009). The Citation Project results from the same institution where the LILAC Project pilot study took place revealed 34 percent of citations in first-year student papers in 2011 were from the Internet, 14 percent from journals, and only 3.5 percent from books.

Project Information Literacy (PIL), a large study of the information-seeking behaviors of young adults across a broad range of institutions, found that 77 percent of students spent between one and five hours on research (Head 2008, 435), with students often “struggling with limiting the scope of a research topic and dealing with the inevitable information overload that accompanies new forms of digital media” (433). However, like so many of the studies conducted of student research practices, PIL used a questionnaire-based approach. Thus, the results may show more about what students think they do—or what they want teachers to think they do—than about what they actually do when tasked with finding sources for a scholarly project. The LILAC Project study, thus, attempts to capture not only what students think they do but also what they actually do when conducting research for an academic project.
METHOD
The LILAC Project is a study of student information-seeking behaviors that attempts to discover what students are doing when they conduct research and, even more important, why they are making the choices they do. We conducted the IRB-approved LILAC pilot study (n = 15) at a midsize, research-extensive university in the southeast United States in the spring of 2012. The study consisted of two components: a research session during which subjects demonstrated a portion of their research process and a questionnaire about information-literacy knowledge, perceptions, and instruction (app. 2.A). Most of the study participants were first-year students (n = 10), with one sophomore, one junior, two seniors, and one master’s student also participating. All students reported English as their first language. Subjects consisted of eight females and seven males between the ages of eighteen and twenty-three. In addition, subjects represented a variety of major fields, including music, education, finance, psychology, and writing, with one student undeclared.

The first component of the LILAC Project pilot study attempted to determine what students are taking away from current classroom and library-based instruction by capturing subjects’ actual research behaviors in brief, ten-minute videos. Each subject began the session with a topic for a paper assigned for a course, a topic they were exploring for course-related research, or a topic chosen from a list of suggestions we provided (see app. 2.B). Our only stipulation was that subjects begin their video narrative by telling us what their topic would be and what class it might be for (e.g., a subject might be researching global warming for an English class). Subjects conducted research for their selected topic using a research-aloud protocol (or RAP) in which they narrated what they were doing and why they were making the choices they did as they worked; these videos were captured using Camtasia Studio screen-capture software. At least one of the principal investigators (PIs) took extensive handwritten notes of subjects’ narrations as they were being recorded in which she particularly noted behaviors she believed should be coded. PIs then viewed representative videos together, along with these notes and the preliminary coding document we had previously prepared, to determine whether the behaviors we observed in the videos and the a priori coding document aligned.

The second component asked subjects to complete a questionnaire detailing what they had been taught about research, when and where they were taught these skills, and what they believed they knew about conducting scholarly academic research. The questionnaire inquired about subjects’ information-literacy instruction in high school and
college, including specific information on where and how they were taught (e.g., lecture, hands-on workshop, directed reading(s), etc.) and what specific skills were covered. In addition, the questionnaire asked subjects to rate their research abilities and answer a series of questions about information literacy so we could better understand their comprehension and perception of these important skills. Questionnaires were then hand tabulated and analyzed to determine trends in subjects’ perceived knowledge.

DISCUSSION OF METHOD

The pilot study provided us an opportunity to test and improve our methodology prior to launching the LILAC Project as a larger, multi-institutional study. The pilot study confirmed our belief in the strength of our methodology while revealing where further tweaks to the method would strengthen confidence in our findings.

During and after the pilot study, we made slight alterations to the ordering of the two components (the questionnaire and the RAP session), to the questionnaire, and to the length of the RAP video captures. Based on feedback from workshops and conference presentations with librarians, teachers, and other researchers, we refined the questions we were asking and reordered the questions to allow greater alignment with behaviors captured in the videos. We further refined the video coding sheets, ensuring that our coding adequately reflected subjects’ information-seeking behaviors, both those we could see on the subjects’ computer screens and those narrated by subjects. Important to note is that what subjects are actually doing in the captures is not always what subjects say they are doing, so our coding needed to allow for such discrepancies. We also expanded the length of the RAP video captures to fifteen minutes to allow us to capture more information from subjects.

Ordering

The first ten subjects completed their RAP sessions immediately after reading the informed consent form and signing the video release. After the RAP session, the subjects completed the questionnaire. We opted to reorder the questionnaire and the RAP session for the last five subjects. We reordered the two components because we were uncertain whether completing the RAP session prior to the questionnaire would skew subjects’ responses to the questionnaire or vice versa. However, results from the final five subjects showed the completion order had no discernible
effect on the questionnaire data or on the behaviors captured in the RAP sessions. For the full LILAC study, our IRB\(^1\) allowed us to eschew the signed informed consent document and video release and instead include a passive informed consent document as the first page of the Qualtrics questionnaire since it was determined that this study posed minimal risk and there was no need to collect identifying information from subjects. We opted, therefore, to begin sessions for the full LILAC study with the questionnaire, then follow with the RAP video captures. Since the RAP video captures were anonymous, the IRB further allowed these to be posted to YouTube for purposes of research, teaching, and publication or presentation without requiring subjects’ to sign a release assigning any intellectual property rights to the videos.

**Questionnaire**

Following the pilot study, we redesigned both the content and delivery of the questionnaire. Questions were reordered or reworded for clarity and to align better with behaviors captured in the RAP videos. Pilot-study subjects completed paper questionnaires, which can cause various marking issues. Participants may change an answer but not completely erase or mark through the erroneous mark, or stray marks may be misinterpreted as an answer when responses are tabulated. Questionnaire results were then manually entered into a spreadsheet to allow for analysis. This manual entry also allowed for the introduction of errors. Following the pilot study, therefore, we elected to use Qualtrics online-survey software to host the questionnaire, thus eliminating mistakes possible in hand-tabulated questionnaire data and allowing for easier analysis and reporting of data.

We also reviewed drafts of the questionnaire at LILAC Project workshops held at the Georgia International Conference on Information Literacy, which brought together K–20 cross-disciplinary faculty and librarians. These reviews helped us fine-tune the questionnaire as we prepared to develop the full LILAC Project study. A graduate research assistant also helped order the questions to ensure ease of tabulating results and alignment with coded behaviors in the RAP video captures (see app. 2.A).

**RAP Instruction Sheet**

Subject instruction sheets for the RAP video sessions (app. 2.B) included a brief overview of the process, including stressing the importance of
subjects’ narrative input; suggested ideas for topics for research; and some suggested prompts for subjects to use when narrating (e.g., “The first place I look for information is . . .”). Pilot-study subjects were able to select topics from a variety of sources: topics they were currently working on for a class, topics they had researched for previous classes, topics of their own choosing, or topics selected from the list we provided. We would have preferred to capture subjects working on actual course projects; however, some subjects either had not yet been assigned a research project in their classes or had already completed one. In addition, many subjects claimed they had never had to conduct research for a class project prior to participating in our study, either in college-level classes or in high school. Of course, the majority of our subjects were first-year students, so it is entirely feasible they had not yet been assigned research for a college course-related paper or project at the time of the study.

The variety of topic-selection methods provides a glimpse into the variety of ways students may conduct research for different types of assignments and at different points in their research process. A subject choosing a topic from our list of broad topic areas might use the RAP research session to focus the topic by conducting background research, for example, while a student working with a self-selected course topic might not need the same background information, depending on familiarity with the topic. While not within the scope of the current study, knowing more about how subjects select their RAP session topics could assist in better understanding how students conduct research at various points in the research process.

**RAP Session Length**

For the pilot study, we set the length of RAP sessions at ten minutes. However, after viewing the RAP videos in conjunction with the questionnaire results, we opted to extend the length of the captures to fifteen minutes. This extension allowed more time for subjects to conduct research without expending too much time. Sessions generally took a total of thirty minutes each, with a few minutes for explaining the project to subjects and going over the informed consent document and subject instructions; subjects then completed the questionnaire and the fifteen-minute RAP session. While lengthier sessions might be possible, asking subjects to give us more time might not be feasible, and certainly coding lengthier sessions would be more time consuming.

After viewing the fifteen ten-minute videos collected during the pilot study as well as over one hundred fifteen-minute RAP videos
captured so far from the multi-institutional study, we believe the extra time is warranted in order to allow subjects to fully demonstrate and narrate their information-seeking behaviors but that additional time beyond the fifteen minutes might provide only repetition of behaviors already captured.

It should also be noted that some subjects elected to stop before the end of the ten- or fifteen-minute capture. Many of the subjects who opted to stop early said they had found all the sources they needed (or all the sources they were required to include). At this juncture, only a few subjects have opted to end the session before the timer runs out, so further study might include interviewing subjects to determine whether ending the session early is significant in any way. That is, while not within the purview of this study, it would be interesting to try to determine how much time students actually spend doing research for their academic projects.

*Video Coding and Time on Task*

We used the pilot study to begin thinking about how to analyze information captured in the videos. First, as Brigid Barron and Randi A. Engle note, to be effective, research videos should be guided by the research questions (Barron and Engle 2007, 24). To this end, we researchers began comparing our research questions, the behaviors captured, the coding sheets, and the questions asked in the survey to ensure alignment. While we considered transcribing both visual and auditory information captured in the RAP video sessions, we ultimately decided against transcription due to the time and complexity of so doing. Further, as Barron and Engle note, such transcripts may not be suited for discovering patterns (24).

We did track subjects’ activities throughout their research session, with initial coding taking the form of listing each move made in individual videos and then comparing similarities across videos. We compared both the moves subjects made during their research session and the order in which subjects visited sites throughout their research. In addition, we created lists of search terms used in each video to see whether we could determine trends in the structure and type of search terms used most often. One final aspect of the initial coding looked at time spent on each task in actuality versus clock time in the video and then compared each individual subject’s results with the rest of the subjects. Determining time on task provided an accurate portrayal of subjects’ research processes, especially in cases in which one subject’s clock time
on a page lasted for up to two minutes, but a majority of this time was spent on multiple, unsuccessful attempts at highlighting a specific portion of the text to copy and paste into a Word document.

We used the lists we created from viewing individual videos to refine our initial coding sheet, a general list of behaviors captured in the videos. This initial coding sheet helped us determine what subjects were doing in their early research but studying the coding sheets alone did not provide enough detail. For instance, coding for *follows link* from the initial coding sheet did not allow for specificity about which link the student followed without the coder’s providing additional commentary to distinguish whether the student selected the sponsored link or the first link in the search results below the sponsored link. Thus, the initial coding sheet highlighted the ambiguity in this coding system and provided a framework for a more detailed coding sheet.

Following the pilot study, we held workshops at conferences that included K–20 cross-disciplinary faculty as well as librarians to ensure our coding would accurately reflect the behaviors captured in the videos. Then we collaborated with our first multi-institutional research partners to develop a revised coding sheet. The revised version provides a more detailed coding system that better aids in identifying subjects’ individual moves in their research sessions. As we continue to expand the LILAC Project as a multi-institutional study, we continue to formalize the coding process and contents, bringing together groups of researchers to view the videos, expanding and finessing the coding, and beginning the process of ensuring interrater reliability. Working together to code the videos and refine the coding document improves our interrater reliability by providing more specific items for video coding and allows for greater alignment with questionnaire results. Following the work of the Citation Project, we plan for each video to be double coded, with at least one of the coders from a different institution than the one at which the video is captured.

Thus far, we have hand coded videos, with at least two researchers viewing each video to determine whether identifiable trends exist among subjects. However, for the full study, we plan to use Atlas.ti software to help analyze the coded video data. Atlas.ti is particularly useful for qualitative analysis of unstructured data, such as that found in written texts and visual/graphic, audio, and video files. However, while Atlas.ti should help identify patterns, such as subjects’ use of Google as the most prevalent or most-used site in the videos because it will “bubble up” to the top, this software will only produce a “scattershot” of identified behaviors and, hence, may not be useful in capturing the sequence subjects follow,
such as consistently using the same search terms, or in identifying mis-
matches between what subjects say they are doing (captured in subjects’
audio RAPs) as opposed to what they are actually doing (as captured by
the video). Coding will be a time-consuming process, especially with the
large number of RAP video captures we hope to include (N = 1000). And,
of course, because it is a mixed-methods study, we still need to determine
how well the qualitative data captured by Atlas.ti will relate to the quanti-
tative data captured by the Qualtrics surveys.

FINDINGS
The pilot study included fifteen subjects ranging from first-year under-
graduates to graduate-level students. For now, we will consider only the
first ten subjects (those who completed the RAP video session prior to
completing the questionnaire). The majority of these subjects (eight sub-
jects) were first-year students, with one senior and one graduate student
for the remaining subjects. Table 2.1 provides a breakdown of the first
ten pilot-study subjects’ year of study and academic majors and minors.

Questionnaire results revealed a range of findings regarding sub-
jects’ information-literacy education and skills. With reference to gen-
eral skills, nine subjects reported receiving instruction in high-school
English courses, and seven reported further training in college English
courses. In relation to online searches, seven reported receiving train-
ing in keyword searches and online databases, but only five in web-based
searches; four reported having been provided guidance on evaluating
these web-based sources. Only two subjects reported receiving instruc-
tion in determining the type of source they were working with, yet all
subjects felt their abilities to locate and evaluate online sources were well
above average. Subjects also reported that the majority of their research
involved online search engines. Six of the ten subjects responded with
“strongly agree” to the statement about using the Internet for the major-
ity of their research needs; the other four subjects all responded “largely
agree” to the statement. We suggest this familiarity with the Internet may
represent an overconfidence in online-research abilities.

Subjects’ RAP sessions also clearly illustrate the role both Google and
Wikipedia play in beginning-student research. All undergraduate subjects
in the pilot study began with either Google or Wikipedia, and eight did
not change their search strategy throughout their sessions. One first-year
subject mentioned visiting the library for information at the conclusion of
his information-seeking session but did not do so during the brief session
we captured. Only two undergraduate students explored other online
options, including Google Books and YouTube, while only one undergraduate subject and the one graduate subject searched the library’s online databases. The graduate student also visited Google Scholar.

The RAP sessions show a consistency between where subjects report beginning their research and where they actually begin their research. However, not enough subjects demonstrated the skills reported in their questionnaire responses, so it was difficult to make connections between the questionnaire and video data to determine the extent of the gaps between these perceived research skills and actual research skills used in academic research tasks. That is, since few subjects visited the library website during the RAP video captures, it was not possible to compare subjects’ strengths in using the library as reported in the questionnaire with subjects’ actual library-search behaviors. As we expand the study, we hope to capture more of these behaviors to address this gap; a spin-off study looking solely at students’ use of library resources might also be warranted.

**DISCUSSION OF FINDINGS**

Findings from the LILAC Project pilot study are not generalizable; however, as we refine and expand the study, we hope to provide a starting point for a better understanding of the connections and disconnections between subjects’ perceptions of their academic research skills and their actual behaviors as captured by the RAP video sessions. The questionnaire data allows us to connect our research to other

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Table 2.1. LILAC Project pilot participant academic demographics

<table>
<thead>
<tr>
<th>Name</th>
<th>Year of Study</th>
<th>Major</th>
<th>Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharon</td>
<td>Master’s</td>
<td>Public Administration</td>
<td>N/A</td>
</tr>
<tr>
<td>Maria</td>
<td>Freshman</td>
<td>Psychology</td>
<td>N/A</td>
</tr>
<tr>
<td>Trevor</td>
<td>Senior</td>
<td>Writing and Linguistics</td>
<td>Journalism</td>
</tr>
<tr>
<td>Robert</td>
<td>Freshman</td>
<td>Economics/Finance</td>
<td>Music</td>
</tr>
<tr>
<td>Frank</td>
<td>Freshman</td>
<td>Journalism</td>
<td>N/A</td>
</tr>
<tr>
<td>Paul</td>
<td>Freshman</td>
<td>History/Political Science</td>
<td>Economics</td>
</tr>
<tr>
<td>Jennifer</td>
<td>Freshman</td>
<td>Multimedia Communication</td>
<td>N/A</td>
</tr>
<tr>
<td>Laura</td>
<td>Freshman</td>
<td>Sports Management</td>
<td>Business</td>
</tr>
<tr>
<td>Michael</td>
<td>Freshman</td>
<td>Computer Science</td>
<td>N/A</td>
</tr>
<tr>
<td>Heather</td>
<td>Freshman</td>
<td>Music Education</td>
<td>N/A</td>
</tr>
</tbody>
</table>
questionnaire studies to determine how our results compare to larger trends, and the pilot study allowed us to recognize ambiguous questions we might consider revising for the larger multi-institutional study. Further comparison of the questionnaire data to the subjects’ RAP video sessions offers additional insights that expand our understanding of the questionnaire data. Though the RAP sessions, of course, do not offer a complete portrait of demonstrated student information-literacy skills, they do further our understanding of how subjects conduct research while also illustrating areas of ambiguity that possible revisions to the larger study may address. Results from the LILAC Project pilot study, while certainly not generalizable from such a small sample, do allow us to begin ascertaining these trends, and analysis of the results has also allowed us to plan for changes necessary to the methodology as we continue to expand the study to include additional institutions and academic populations.

Questionnaire Data, Large and Small

The pilot-study data does suggest possible trends among our subjects and subjects in other studies. For instance, all ten subjects in the first part of our pilot study indicated they use the Internet for a majority of their research. Alison Head’s findings that 88 percent of 358 first-year students and 87 percent of upper-class students surveyed continue to use Google in academic research bears this out (Head 2013, 25). At first glance, more of our subjects reported using Google than those in Head’s larger study, which can indicate the need for a larger subject pool, but further analysis of the questions from Head’s study, as well as the interview responses in Monica Cólon-Aguirre and Rachel A. Fleming-May’s study of Wikipedia use among students, illustrates an ambiguity in our questions that can be addressed in future iterations of the study (Cólon-Aguirre and Fleming-May 2012, 394).

For example, the questionnaire term using online search engines from our original questionnaire might receive the same response from a student who uses Google to reach a Wikipedia page related to their research (a trend among Cólon-Aguirre and Fleming-May’s [2012, 394] interviewees), a student who uses Google to reach their university library page, and a student who uses Google to locate sources for their research. Similarly, respondents to Head’s question about whether students use Google as an “information resource” (Head 2013, 24) may have also generated ambiguous responses given the vast number of ways students may use Google at various points in the research process. In addition,
students using an on-campus connection to conduct research through Google or Google Scholar often can access peer-reviewed sources not available otherwise. In terms of locating information at the start of a research project, there is a significant difference in conducting a quick Google search to locate a Wikipedia page (where students can use a single page to gain background information on a topic), using Google to begin searching for specific sources relevant to the research paper, and using Google or Google scholar to access peer-reviewed research. The RAP videos our subjects complete with their questionnaire responses better inform ambiguous responses such as these; however, this leaves questionnaire data ambiguous in itself. Thus, the RAP videos provide more specific information about how students perceive their use of Google at the start of a research project was one consideration for questionnaire revisions for the multi-institutional study.

(Only) the First Fifteen Minutes

The pilot study RAP video sessions capture ten minutes of subjects’ research activities, and, almost unanimously, these subjects were just beginning their research for a project, which may be a limitation of our study. However, the LILAC Project does not attempt to capture a synoptic view of the research process but rather attempts to identify subjects’ research behaviors so pedagogical approaches to teaching information literacy may be revised or expanded as needed to assist students in developing a stronger information-literacy foundation for all research.

One important feature of the RAP sessions is subjects’ voice narrations. Not only do these allow us to compare what subjects are actually doing with what they say they are doing—something using questionnaire data alone cannot do—but they also allow us to begin to ascertain why subjects are making the choices they do. For example, a student may avoid Wikipedia because teachers have told them it is not a reliable source since “anyone can edit it.” However, another subject may opt to use Wikipedia anyway since it provides the information they are looking for. One disturbing, though nearly unanimous, reason students give for choosing certain types of sites is that they claim to have been told that .org sites are always reliable while .com sites should be avoided. That is, students are attempting to evaluate the sources they find, but they are often doing so erroneously. One possible reason, of course, is that students are looking for quick answers, which seems to bear out the Citation Project’s findings. Another reason, however, may hearken back to what students have been taught—or at least to what students
remember or understand from that instruction. Subjects in the pilot study did not often elaborate on these decisions, which means we can only hypothesize from the subjects who were specific about their reasons. This limitation may illustrate a need to ask subjects to participate in a brief interview at the end of their session focusing on specific questions, such as questions about their motivation for Wikipedia use or their avoidance of .com sites, and could provide important insight into students’ information-literacy knowledge and understanding.

One common finding identified through the pilot study RAP video sessions was that subjects starting with Google and Wikipedia are not always searching specifically for sources but rather use these searches as a means of gaining background information on their topic. It was evident to the researchers that, in many of these videos, subjects were actually conducting preliminary research that could be used to help them focus a topic, even though it was not necessarily apparent to the subjects that this was what they were doing. Instead, most subjects simply continued to collect information rather than finding a focus and then conducting further research with that focus in mind. Such an insight helps us identify a process that can assist in the development of new pedagogical approaches; for instance, a better approach might be delaying the library-research workshop until students have a firm understanding of their topic from preliminary research and reading rather than beginning with the research assignment and library skills. Alternatively, introducing research as an ongoing part of the assignment may need to be stressed more. That is, many subjects told us they would begin writing after collecting sufficient sources (either because they thought they had all they needed or because they had the number of sources they were required to include). None of our subjects in the pilot study noted the need to continue research as they write. Further study of students’ writing-from-research processes clearly seems to be warranted.

The RAP video artifacts also provide excellent teaching tools. Subjects are not identified by name and the video captures show only the subject’s computer screen, thus allowing the ten- to fifteen-minute videos to be viewed without risk of identifying subjects. In addition to the common findings discussed above, some videos contain information that offers opportunities for just-in-time instruction. For instance, one video shows a student copying information from web sources into a Word document without making detailed notations of where she located this information. This portion of the RAP video allows for discussions about the importance of documenting sources from the beginning of research. The videos are long enough to provide a substantial view of an
anonymous student’s research process but short enough to be viewed and discussed in a single class period. The LILAC Project will be publishing the RAP videos to a publicly accessible YouTube channel, so the videos will be freely available for purposes of teaching, research, or scholarship, following the model of the Digital Archive of Literacy Narratives (DALN) hosted by Cynthia L. Selfe at Ohio State University. Using the RAP videos as discussion starters provides educators with a valuable pedagogical tool for beginning more realistic discussions about students’ research processes, whether the educator’s institution is associated with the LILAC Project or not.

CONCLUSION

One issue the pilot study identified was the need to expand the LILAC Project in several areas. The pilot study consisted of fifteen students at a single university, but findings, while not generalizable, do seem to agree with other studies that suggest a larger national trend. After completing the pilot study and revising the methodology as discussed in this chapter, we have begun recruiting additional universities to partner with us in collecting data. Expanding the study offers the chance to work with a more diverse subject population—from community colleges to doctoral universities, from rural and urban campuses, and from a variety of geographic areas. Such a diverse participant population will, we hope, eventually allow us to better discover trends within specific universities, specific disciplines, and specific student populations and to report more general findings across institutions, institution types, and geographic and demographic divisions. Among the expanded findings, we hope to see not only where and how students obtain and use essential information-literacy skills but also to determine whether there are specific markers for the academic time in which students begin to turn more to academic research. Spin-off studies might include future iterations of RAP sessions, for example, by offering instructions to subjects that focus more specifically on other skills. For instance, a revised RAP subject instruction sheet might ask students to conduct research using only library databases so we can establish connections with other areas of questionnaire results and better assess how different levels of students interact with the library databases and how proficient these students are with this type of research. Questionnaires could also be designed to include teaching information or an expanded section targeting more specific research skills, as well as to address questions that could emerge with a more diverse subject population.
We are currently seeking additional partner institutions to join us in collecting data for the LILAC Project. Ultimately, we hope to gather data from as many as one thousand subjects from a variety of institutions. We also encourage spin-off projects, such as one currently being conducted with pre- and in-service teachers at a regional university in the southeastern United States. For researchers considering partnering with us or developing spin-off projects on their own, we have made all the materials for the LILAC Project, including the IRB application—which includes the questionnaire, subject instructions, recruitment flyers, coding instruments, and more—available in a publicly shared Google Drive folder. In addition, we will be publishing RAP videos collected from both the pilot study and the full, multi-institutional study to a public YouTube channel, which we hope will be a useful repository for teaching and research.\(^5\)

Notes
1. The final LILAC IRB, along with our partner and subject instructions, a link to the Qualtrics survey, and revised coding documents can be accessed in our shared Google Drive folder at http://tinyurl.com/mkzzrbo.
2. Discrepancies included such things as page not loading or taking extensive time to load, subjects contemplating search terms, and subjects correcting spelling of search terms after the initial loading of results.
3. See the Citation Project’s Information for Participants at http://site.citationproject.net/wp-content/uploads/2011/11/Citation-Project-Information-for-Participants.pdf.
4. All subject names are pseudonyms.
5. For more information on the LILAC Project, contact the authors at jwalker@GeorgiaSouthern.edu or abblackwellst@lamar.edu.

APPENDIX 2.A

**QUESTIONNAIRE**

Do NOT write your name anywhere on this questionnaire. The coded number in the upper-right-hand corner will associate the data in this questionnaire with your video, but will NOT be associated with your consent form or any other identifying information.

This questionnaire is part of a research project aimed at studying student information-seeking behaviors. By completing this questionnaire you consent to participate in this research study. We greatly appreciate your cooperation in completing this survey. Please be assured that information collected will be kept confidential and anonymous. You may refuse to answer any question or you may stop at any time with no penalty.
DEMOGRAPHIC INFORMATION:

1. Age:
2. Gender:
3. Major (Program of Study):
4. Minor (if applicable):
5. Is English your first language? Please circle: Yes / No
6. Are you a (check one):
   a. Freshman
   b. Sophomore
   c. Junior
   d. Senior
   e. Graduate Student (Masters level)
   f. Graduate Student (PhD level)
   g. Other (please specify):

QUESTIONNAIRE:

1. In what course(s), if any, were you taught library and/or online research skills? (Check all that apply.)
   - English course—high school
   - English course—college
   - College Orientation
   - Other (please specify):
   - None (Proceed to Question 4)

2. How was instruction provided? (Check all that apply.)
   - Lecture
   - Hands-on workshop
   - Directed reading (textbook, handout, online tutorial)
   - Other (please specify):

3. What research skills (if any) were you taught? (Check all that apply.)
   - Using Boolean operators
   - Keyword searching
   - Subject/Author/Title searches
   - Library catalog
   - Online library databases
   - Web search strategies
   - Note taking
   - Citation practices (e.g. MLA, APA, etc.)
   - Summarizing information
   - Paraphrasing information
Integrating information from sources with your own arguments
Using quotations effectively
Avoiding plagiarism
Interlibrary loan
Knowing when information from outside sources is needed
Determining source types (e.g. difference between an edited
collection and a single author source)
Evaluating sources (Print)
Evaluating sources (Online)
Evaluating sources (Web)
Conducting interviews
Composing effective surveys and/or questionnaires
Determining the type of information needed
Citing sources in the text
Compiling a Works Cited list following MLA format
Compiling a References or Bibliography list following APA format
Compiling a source list following another style (please specify):
Using a bibliographic generator (EasyBib, BibMe, etc.)
Citing media other than text (for instance, pictures, video, or audio
sources)
Other (please specify):

On a scale of 1–10, with 1 being the lowest and 10 being the highest, please
rank the following.

1 (Lowest) —— 10 (Highest)
4. Your ability to locate books on a given topic in the university library
5. Your ability to locate articles in scholarly journals in print
6. Your ability to locate articles in scholarly journals online
7. Your ability to locate information on a topic online
8. Your ability to evaluate the reliability of online information sources
9. Your ability to evaluate the reliability of print information sources
   Yes or No
10. Have you ever been required to include information from library and/
online research in a paper or project? Yes/No
11. If you answered yes, to question #10, what course or courses was it for?
Please indicate the extent to which you agree with the following statements
   using a scale of 1 to 5, 1 being “Strongly Disagree” and 5 being “Strongly
   Agree.”

12. I am a strong writer.
   1 2 3 4 5
14. Writing will be important in my career.
   1 2 3 4 5

15. My library research skills are adequate to my needs.
   1 2 3 4 5

16. My online research skills are adequate to my needs.
   1 2 3 4 5

17. I would like to improve my research skills.
   1 2 3 4 5

18. I have been provided adequate instruction in library and online research skills.
   1 2 3 4 5

19. I do most of my research using online search engines.
   1 2 3 4 5

20. I do most of my research using library resources.
   1 2 3 4 5

21. I know how to cite information obtained from outside sources in my papers.
   1 2 3 4 5

22. I know how to cite quotations in my papers.
   1 2 3 4 5

23. I know how to summarize information.
   1 2 3 4 5

24. I know how to paraphrase information.
   1 2 3 4 5

25. I know how to evaluate the information I find.
   1 2 3 4 5

26. I understand the importance of using and presenting information ethically.
   1 2 3 4 5

27. I understand the difference between summarizing and/or paraphrasing information from sources and plagiarising.
   1 2 3 4 5

28. I understand how to cite multimedia (pictures, audio, and/or video components) that I may include in my papers or projects (online or in print).
   1 2 3 4 5

29. I have been instructed in the basic tenets of copyright legislation and fair use.
   1 2 3 4 5
30. I believe teaching research skills in schools and colleges is a waste of time.
   1 2 3 4 5

31. Research is about finding information to support my opinions.
   1 2 3 4 5

32. If I already know what I want to say, I do not need to locate information on opposing points of view.
   1 2 3 4 5

33. If information is posted on a government Web site (.gov), it is accurate.
   1 2 3 4 5

34. If information is posted on a commercial Web site (.com), it is not credible.
   1 2 3 4 5

35. If information is posted on a news or newspaper Web site, it is accurate.
   1 2 3 4 5

36. If information is posted on an organizational Web site (.org), it is credible.
   1 2 3 4 5

37. Information posted by an educational institution (.edu) is always reliable.
   1 2 3 4 5

38. I understand the difference between primary and secondary sources.
   1 2 3 4 5

39. Once I have located the required number of sources, I do not need to look for more.
   1 2 3 4 5

40. I often use a bibliography generator to automatically format my citations for the Works Cited list.
   1 2 3 4 5

41. I maintain detailed records or notes of my research.
   1 2 3 4 5

42. I sometimes forget where I got information from.
   1 2 3 4 5

43. I understand what a “scholarly peer-reviewed journal” is.
   1 2 3 4 5

44. I usually use the Web for most of my research needs.
   1 2 3 4 5

45. I usually use the library databases for most of my research needs.
   1 2 3 4 5
46. I know how to use Interlibrary Loan (ILL) services.
   1 2 3 4 5
47. I ask the reference librarians at my university library for help when I get stuck (either in person, via email, or “Ask a Librarian” chat services, if available).
   1 2 3 4 5
48. Most of my research is completed at home.
   1 2 3 4 5
50. I often wait until the last minute to do my research and write my papers.
   1 2 3 4 5

Thank you for completing this questionnaire! Please return the questionnaire to the drop box.

APPENDIX 2.B

PARTICIPANT INSTRUCTIONS

You need information for a paper you are writing for a class. For this study, we will record a brief 10–15 minute video of your information-seeking (research) behaviors along with your spoken narrative, telling us what you are doing and why. We will not be recording any video of your face, and no personally identifiable information will be included.

There are no “right” or “wrong” answers; we are interested in finding out how students such as you locate information for their academic projects. Please do whatever you would normally do when you need to locate information for papers or projects.

You may choose one of the following topics or one of your own. Please identify your topic at the beginning of your narrative (for examples, “I am writing a paper on X for a class in Y. The first place I would look for information is. . . . ”).

SUGGESTED TOPICS

1. Global warming/environmental issues
2. Health care/health issues
3. Diversity issues (gender, race, ethnicity, etc.)
4. Historical events/issues
5. Literature/literary research
6. Engineering and/or technical topics
Please let us know when you are ready to begin, and we will start the recording. You may stop at any time, or we will stop you after no longer than 15 minutes.

Thank you for your help with this project!

References


Chapter 7

ASKING THE RIGHT QUESTIONS
Using Interviews to Explore Information-Seeking Behavior

M. Whitney Olsen and Anne R. Diekema

ABSTRACT
This chapter reports on an interview-driven qualitative research study of first-year writers’ information-seeking behaviors. Informed by a synthesis of literature from the humanities and information science, we arrived at key exploratory findings by recruiting eleven first-year writing students from two universities (five at one and six at the other); interviewing them using a semistructured methodological approach; and processing the transcribed interviews using thematic analysis (Boyatzis 1998). The study indicates that students continue to be Google dependent and to prefer secondary sources. They demonstrate a behavior we call funnelling as they conduct their information searches (beginning with expansive search terms and moving toward more specific terms and expectations at the end of their research) as well as reliance upon people as information sources, favoring friends and family members over faculty and information professionals.

INTRODUCTION
In 1993, Charles Schroeder wrote, “I am suggesting that an overall understanding of how students learn and where they are in the process can help us meet the needs of the new students who sit in our classrooms” (Schroeder 1993, 26). His suggestion is as true now as it was more than twenty years ago: as teachers, we must understand our ever-changing groups of students in order to help them. Today’s writing students are mired in a conflicting world of computers and pens, smart phones and paper, and digital and physical information. Before writing

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instructors can ask students to research, it is imperative to understand their information behavior. In their article “Information Behavior,” Karen Fisher and Heidi Julien write that 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 and Julien 2009). That description provides a basis for the research described in this chapter.

Information behavior is fluid and context dependent (Attfield, Blandford, and Dowell 2003, 435; Boyd 2004, 82); different user groups exhibit different information-seeking behaviors (Boyd 2004, 82). First-year writing students comprise a large and diverse information-user group dispersed across the United States. These facts make this group particularly compelling to study in terms of information behavior since their writing classes, in many ways, are representative of their campuses and the undergraduate information user group as a whole. In spite of previous research (e.g., Downs and Wardle 2007; Li and Casanave 2012), we still have much to learn about first-year writing students’ information behavior and undergraduate students’ information use in general. Yet instructors are repeatedly challenged to teach students information skills without an empirical understanding of their students’ contexts or practices. This chapter introduces a small pilot study designed to revisit questions from earlier research about the information-seeking behavior of first-year writing students. It is our hope that explicit discussion of our research methods will provide a foundation for future researchers to replicate or expand the study and that the findings themselves—especially where they correlate with findings from other studies—will provide writing instructors with a better understanding of the information-seeking strategies of their students and the pedagogical strategies they might adopt in response.

**FRAMEWORK**

Jamieson and Howard (2011) note that how students research and cite is underresearched, especially as such practices relate to the rapidly expanding role of digital information. While it is generally assumed that all the information readily available on the Internet has increased, a parallel increase in plagiarism has been proven difficult to measure (Walker 2010). What is clear, however, is that undergraduate students still cite books and journals from local library collections (Hendley 2012; Jamieson 2016). Thus, we present a framework for understanding
the information-seeking behavior of undergraduates based on literature from information science and the humanities. For the purposes of this chapter, we define university writing courses as required, general education, lower-division writing classes aimed at teaching incoming college and university students to write in formal and/or academic modes (e.g., first-year composition, freshman writing, and so on). This study focused on students enrolled in classes that required them to conduct research for their writing assignments. With online information resources such as digital libraries, websites, and blogs playing a more prominent role among all 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 nondigital information-seeking behaviors. This study investigated the following questions:

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

METHODS

Basic Description

This study draws on qualitative methods of data collection and analysis. We selected naturalistic methods, interviews in particular, because we felt they were the best way to gather exploratory data that would reveal both students’ search and use processes, as well as the context for that process on a granular level. We gathered data through eleven-question semistructured interviews (see app. 7.A) at two large public universities in the United States in the spring of 2012. We chose semistructured interviews because this approach allowed more flexibility than fully structured interviews while still providing uniformity of the data we collected. The data for this research study were collected in the context of a class, which resulted in rich data because the students were in the process of searching for information to write their papers. The drawback to holding in-person interviews was a smaller sample size, which didn’t necessarily allow us to generalize these findings to the entire population of first-year writing students.

Eleven students volunteered to participate, five at institution 1, and six at institution 2. All interviewees were white; seven were male,
and four were female. To preserve as much of the instructional and task-orientation context as possible, all interviews were conducted on students’ respective campuses. The interviews were conducted with individual participants in a private room; one researcher interviewed the student and the other observed the interview via Skype (videoconferencing software), asking 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. We employed thematic analysis and an inductive approach to analyze students’ responses to the interview questions (Boyatzis 1998). This process involved transcribing the audio recordings of student interviews, during which process we took note of interesting phenomena and trends, which informed our initial coding scheme. After the transcription process, we used the initial coding scheme to code the transcribed interviews. The coding scheme was extended with additional codes as needed, and the researchers clarified the different codes to achieve consistency. As such, this study used inductive codes, derived directly from the interview data, developed from the bottom up (Boyatzis 1998).

Expanded Discussion of Methods

To arrive at these methods, we first developed our interview guide (see app. 7.A) based on the research questions that shaped the study. Next, both researchers identified a suitable quiet, private location to interview participants. At institution 1, the researcher used her office. At institution 2, where the researcher shared an office, the researcher requested a room from her department and was granted one in the conference room of the department’s main office.

Students who were enrolled in a single class at each institution self-selected for participation in this study. At institution 1, the researcher solicited student participants by contacting an instructor in the English department by e-mail, who then advertised verbally in one section of first-year writing and collected sign-ups by e-mail. Students at institution 2 were solicited via e-mail by their instructor, one of this study’s researchers, and invited to use a website to choose an interview date and time. At both institutions, students were offered a nominal amount of extra credit, with additional opportunities for extra credit existing in both classes.

Next, the researchers followed a standard procedure to prepare for the interviews. For each interview, the researcher printed a clean copy of
the interview guide, leaving space on the page for notes, which we hand-wrote on the page as needed. Each researcher turned on her computer, then opened and tested the audio-recording software. We used Audacity, a free audio-recording and editing package available at sourceforge.net. Then, the researcher logged into Skype for the other researcher to attend the interview in both audio and visual formats.

When the student arrived, the researcher welcomed the student, explained the purpose of the research, provided and explained the informed-consent form and asked the student to sign it, then started the audio recording. The interview followed a semistructured format, with the interviewer asking a question from the guide, allowing the student to respond, then asking follow-up questions or probing certain points further as needed. When the interview was completed, the researcher turned to the second researcher attending via Skype and asked if there were any questions they would like to pose. Once the interview was over, the interviewing researcher ended the audio recording, thanked the student, offered a candy bar as thanks for their help, and accompanied them to the door.

Once all participants had been interviewed, the researchers listened to the recordings using headphones and typed up the interviews verbatim in word-processing software. Doing our own transcriptions had the benefit of getting us much closer to the data than we could have if we had paid others to transcribe for us. When transcriptions were complete, we met to discuss emergent themes, inspired by the methods outlined by Richard Boyatzis (1998) and the detailed knowledge of the interviews that developed from the intensive transcription process. Arriving at a consensus for a theme allowed us to define it as a code, which was added to a digital coding sheet in a word-processing program. We used the first coding sheet to locate examples of the codes in the interviews, and as additional codes emerged, we met, arrived at a consensus, and added the code to the coding sheet and did additional coding passes of the transcriptions already analyzed. When all transcriptions and codes were exhausted, we concluded our analysis.

Limitations of This Method and Recommendations for Follow-Up Studies

Data were collected on students’ campuses, in academic buildings and rooms, and in the case of institution 2’s students, by their instructor. It is possible 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 the students’ peers or researchers from other institutions.

A larger sample size from more sites would help balance any skew caused by location, institutional practices, or policies or pedagogical interventions by individual faculty or librarians. This study was small and basically exploratory; future studies might replicate it in different populations, with larger sample sizes and/or using other questions or methods.

We interviewed eleven first-year writing students from two large, public universities in the United States regarding their information behavior. The small sample size and qualitative methodology were intended to capture as much of writing students’ information-seeking context as possible, but what we gained in nuance we lost in scale. While it is not possible to generalize these findings to larger populations of first-year writing students and undergraduate students, this approach provides an important exploratory snapshot into the world of undergraduate researchers in the second decade of the twenty-first century, building on and updating earlier studies and suggesting areas for further research.

The qualitative nature of our research does not lend itself to meaningful numerical data but is best understood within the larger categories that identify trends and areas for further research. Future researchers might add a larger-scale survey to interviews, as does Project Information Literacy (see Head and Eisenberg 2009), or expand the model of focus groups and individual follow-up interviews (Valentine 1993) to multiple sites.

**SUMMARY OF FINDINGS**

Although we asked eleven interview questions (see app. 7.A), and follow-up questions where relevant, our goal was to answer the three broad questions discussed above. Approaching our findings in this way offers an opportunity to imagine local studies on one aspect of information literacy, a concept that might block or facilitate research behavior (see Serviss and Jamieson, interchapter 3 in this volume, XXX–XXX), or relevant pedagogies. The findings replicate and update prior research, as shown in the detailed discussion of findings later in this chapter.

1. **Where Do Undergraduate Writing Students Go for Information?**

   Our thematic analysis turned up interesting phenomena and trends. These emerged from the data and led to sometimes surprising findings, such as a heavy reliance on friends and family members in the
information-seeking process. When looking for sources, 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. Only a few students reported using physical libraries, librarians and information professionals, content experts, books, or magazines, a significant update from research conducted at the beginning of this century, such as that by Fescemyer (2000) and Rowland and Rubbert (2001), which found that students are strongly attached to print materials, especially books. This progression is reflected in the literature, with studies published in 2005 finding students split between searching for information digitally and physically (Callinan 2005; Twait 2005) and more recent research correlating with our findings (Head 2013).

2. 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 “always” known about or been taught about in their high-school or college classes. 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. First-year writers largely began their search processes by casting a wide net, typing in their topic in its broadest form, such as childhood obesity, or war in Iraq. Their search terms sometimes became more specific as they uncovered more information in the course of their search or if something in particular piqued their interest.

3. 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 they do because they are familiar and accessible. Once students feel comfortable using an information resource, they use it regularly and 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 they feel they clearly understand, and these are typically secondary sources. One way to understand this trend is to imagine students’ neglect of sources as a combination of ignorance and unwillingness to venture outside the information resources with which they are comfortable or to adopt new information-seeking behaviors.
In general, weaknesses in first-year writing students’ information behavior appear to be their heavy reliance on a limited number of information resources and their tendency to engage with only part of these resources; constraints on their time and their reluctance to invest too much time in their writing assignments; inability to generate productive searches; dependence on family and friends as information sources while ignoring librarians and faculty; and employment of easier-to-use (secondary) source types. Such limits suggest first-year students have yet to grasp the concept of research as inquiry or indeed any key aspects of information-literacy instruction. Dedicated lesson plans and course activities in composition courses could form a significant part of the solution to these weaknesses (see for example the recommendations in Head (2013) based on Project Information Literacy research). More research is needed to develop adequately complex and practical plans to assist first-year writers as the large and omnipresent group they are.

**DETAILED DISCUSSION OF FINDINGS IN THE CONTEXT OF PRIOR RESEARCH**

Our findings for this population of FYW students are in line with findings in other studies of undergraduate students more generally, and while we did not replicate the research questions in other studies, we did design them to be in dialogue with and, where relevant, update other research along the lines of the representation of RAD research as a process articulated in this collection (see Serviss, introduction to this volume, XXX–XXX). Students in our study grounded their information-seeking behaviors in the Google search, appearing to operate in distinct comfort zones developed from the instruction they’d received in various classes. They preferred secondary sources, which they often did not read fully. They reported being nervous about their use of Wikipedia, yet they used it anyway. We also found that people who could serve as information sources comprised a major part of students’ information-seeking behavior, but that the people consulted tended to be friends and family members; faculty and information professionals were largely absent. Students also demonstrated limited understanding of citation and plagiarism when summarizing and paraphrasing sources. Below is a fuller discussion of our findings and the other studies that they confirm or update.
Asking the Right Questions

The “Google Generation” Strikes Again

The students interviewed in this study reported research strategies that align with those found in other studies (most specifically Head 2013; Lee 2008; McClure and Clink 2009; Rowlands et al. 2008). This generation of students 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 went to find information. Students were also highly unified in their reasons for using Google as one of their primary resources for information. One student summarized other 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 there were other (“more scholarly,” as student 6 put it) ways to find information. In addition, 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”

Our findings were also in line with those of earlier studies in that the students reported exhausting their searches once they had reviewed the information options they had used before rather than looking for new places to find information (Lee 2008, 214; Kim and Sin 2011, 180–84; Timmers and Glas 2010, 64; Warwick et al. 2009, 2412). Students probably only perceived that they had exhausted their sources, however, as four students admitted there was probably more information on their topic in the source but that they were unsure of how to locate it. Students in this sample used a relatively limited repertoire of information resources, primarily Google, news websites, friends and family, class notes, and select databases through their institution’s library website, all of which appear to represent a distinct “comfort zone” in which they operated. Students tended to describe a linear process as they worked through their selected resources for information, starting at their preferred information resource—for all but one, Google—and proceeding to their next favored resource when no more satisfactory options could be found (students 1 and 3–11). They reported that when they felt they had enough information (usually, the minimum number of required sources for their paper), they simply stopped looking for any more information.
Use and Fear of Wikipedia

Michelle Twait 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 decreasing order of importance) were reputation or credibility; convenience; and format, type, or genre (Twait 2005, 569–70). Hur-li Lee arrived at similar findings three years later (Lee 2008, 214–16). Kyung-Sun Kim and Sei-Ching Joanna Sin studied the selection criteria students claimed to use and compared them with the methods they actually used based on characteristics of the sources they finally selected. From a list they provided as part of the study, Kim and Sin found students’ favored criteria to be accuracy and trustworthiness, ease of accessibility, ease of use, cost (whether the resource is free or not), 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 (Kim and Sin 2011, 184–85). In all of these studies, familiarity was high on the list, and for current students, perhaps the most familiar resource is Wikipedia. Alison Head’s more recent survey of 1,341 first-year students reports that while students describe moving away from Google and Wikipedia as they progress through their education, “learning to navigate their new and complex digital and print Landscape” (and struggling in the process), many others report that “they still relied on their deeply ingrained habit of using Google searches and Wikipedia, a practice that had been acceptable for research papers in high school” (Head 2013, 3). These findings mirror those revealed in our study.

Most students in our study reported that they had explicitly been discouraged or even forbidden to use Wikipedia as a resource of information in their writing by their high-school teachers and/or college instructors and professors. As a result, students were anxious about accessing Wikipedia in the course of their research, all the while feeling comfortable with the generalness of its content. 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 their teachers as disapproving of the site. This cautious use of Wikipedia was also reported by Lim, who observed
that students use *Wikipedia* in the initial stages of their information-seeking process but fail to cite it (Lim 2009, 2200).

**Engaging with Sources**

Jamieson and Howard (2013) found that first-year writing students largely used academically appropriate sources in their papers (e.g., journal articles, books, book chapters, government documents, etc.), but these sources were used selectively. For example, 69 percent of the research had been drawn from the first page (46 percent) or second page (23 percent) of the source (see also Jamieson, this collection). Our pilot study further investigated both these findings by exploring the degree to which students engage with the information they choose. When asked question 8 (*How far into a source do you read before choosing something to include in your paper? Is it different for short sources and very long sources?*), students responded that they would “try” to read the entirety of the piece of information, but most admitted they limited the amount of time they spent on their essays, which subsequently limited how far they read into a source before choosing something and incorporating it into their papers. In many cases, rather than trying to find the best piece of information for their papers, students simply used the first they came across. Student 4 described some of the limitations in delving 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 their sources in their entirety. Student 9 even described printing all his sources and highlighting and annotating them.

**Funneling**

Question 2 on our interview guide explored why students engaged so briefly with their sources. We found that students searched in a way we describe as *funneling*. Students tended to begin their research with expansive search terms to find basic information on the subject. Toward the end of their research, they had more specific search terms and source expectations. Students tended not to browse for topics for their essays, instead choosing them *ahead* of their writing and information-search processes. Armed with a topic, students *then* engaged in browsing behavior, typically using the simplest form of their topic as their search term, such as “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, in their perception, to turn up any more useful information, did students begin to add to or change their search terms.

Student 11 summed up his 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 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 their search process shape their perspectives. 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 worrisome because if this is the case, students are apparently choosing their sources out of convenience, learning little about their topics in the process of writing their essays; they are supporting limited repertoires of knowledge with limited information, found in limited resources of information, a finding that confirms what researchers such as Twait (2005, 567–73) and Lee (2008, 211–19) found.

Social Information Seeking

The students in Twait’s qualitative study reported that in their information searches, they infrequently or never consulted people—whether friends, faculty, or librarians (Twait 2005, 571); however, others have found that students do appear to consult their peers during their information-seeking pursuits and do so more often than consulting faculty and librarians (Baro, Onyenania, and Osaheni 2010, 114–15; O’Brien and Symons 2005, 421). This finding may be the result of local contexts or the fact that not all students studied were first-year students, but it is an issue worth further exploration.

In our interviews, students readily and easily discussed the people involved in their information seeking, and when they chose to talk to people for information, students went to family members and friends unless being prompted or required to contact members outside their social circles by their teachers. Student 10, when asked whether she would cold-contact someone without being required to by an instructor, firmly replied that she would not; she would only contact friends and family in the course of her usual information seeking.

Students reported that they liked referring to friends and family members for a variety of reasons. Student 4 observed that his family members
could be trusted to know good information on the kinds of subjects he tended to write on. 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 additional guidance and instruction is needed from writing instructors to guide their students to information professionals who could help them immensely in their search process (Head and Eisenberg 2009, 15).

Avoiding Plagiarism

A key finding of the Citation Project (e.g., Howard, Serviss, and Rodrigue 2010, 177–92) was that students tend to patchwrite (see Jamieson’s “The Evolution of the Citation Project,” this volume). In Rebecca Moore Howard’s 1993 article, she introduced the term “patchwriting,” describing it as “copying from a source text and then deleting some words, altering grammatical structures, or plugging in one-for-one synonym substitutes” and arguing that patchwriting is “a valuable composing strategy in which the writer engages in entry-level manipulation of new ideas and vocabulary” (Howard 1993, 1). She called on faculty and administrators to stop classifying patchwriting as plagiarism, a lead the Citation Project and the Council of Writing Program Administrators have followed, classifying it as “misuse of sources” but not plagiarism (Council of Writing Program Administrators 2003). Our interviews reveal that this distinction has not reached the majority of students.

Students reported that they are well aware that they should not plagiarize and that they make clear attempts to avoid plagiarizing but struggle to incorporate sources, a finding also reported by Head (2013). Like the students in Head’s study, students in this study reported needing a fuller understanding of the distinctions among quoting, paraphrasing, and summarizing sources and how to cite them. We asked students whether they tended to quote, summarize, or paraphrase in their writing (question 10). If they responded that they summarized or paraphrased, we probed the nature of that practice further by asking how much of the original sentence structure they preserved when they did so. Approximately half the students described keeping the original structure of the source to a large degree (generally defined as misuse of sources). One notable case was a student who believed that simply changing words in a sentence was plagiarism but still didn’t fully
understand how to paraphrase. Student 9 stated, “I completely change it when I paraphrase, I mean, it’s plagiarism if you don’t and so I just usually completely change it, and I won’t cite ‘em, I’ll just use it, the information I found, and I’ll just completely write it in my own words.” Student 9 also stated, “I don’t really like to summarize, ‘cause I never really got how that . . . I know how to summarize it, but I never really got how you cite that.” While students on the whole seemed to understand the proper way to attribute quotes, their understanding of summary and paraphrase was highly nuanced and seemingly incomplete.

CONCLUSION

While some of the findings of this study are inconclusive because of the small sample, many of our findings align themselves with and expand upon existing perspectives of undergraduates and first-year writers, suggesting that earlier research findings and findings from other small studies are generalizable in key areas. We hope others will build upon our research and expand the study to more students, especially first-year students, and more institution types. Such research 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 develop appropriate pedagogies, policies, and resources. But in the meantime, we believe these findings will be of assistance to faculty and librarians helping first-year composition students develop their information-literacy skills, given that these students are still at the start of their academic careers.

Acknowledgments

The authors would like to thank the eleven students who volunteered their time and thoughts and Russ Winn for inviting his students’ participation. We are also indebted to Brock Dethier and Keith Gibson for their terrific feedback on early drafts of this chapter.

Note

1. Due to differences in usage of terminology between the humanities and information sciences, this chapter 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 person, journal article, book, or webpage.
APPENDIX 7.A
INTERVIEW GUIDE

1. The first thing I want you to share is a story. Think about research papers, that is, the essays where you have to incorporate outside sources. Think about ones you have written for your college-level English courses. If it helps, think about the next essay you have to write, too. Tell me the story of what happens from the time you get the research paper assignment to the time you turn it in. As necessary during the story, inquire about where information/research/sources came from.

2. When you do research for your English papers, do you go in search of something specific, or do you tend to browse until you find something? Can you try and describe what your search process is like from beginning, when you start looking for information, to end, when you have everything you need?

3. Generally speaking, where else do you go in terms of gathering research or sources for your English papers, thinking about both people and places?

   List sources here:
   a. Are there any other places you go for information? For instance, digital libraries, databases, library websites, news sites, Wikipedia, or other websites, for example?
   b. I'm not familiar with ______ (information place). Can you describe it briefly for me?

4. Why do you use ______ (source) for your writing research? (What is it about those information places that you find useful? What is special about them?) Go through each source student mentioned, asking why student uses each source.

5. How did you find out about these sources of information? (Were you taught how to use them? Did you hear about them from friends or roommates? Forums? Study guides? Just happen upon them?) Go through each of the sources the student volunteers to learn how s/he found out about them.

6. When you come across a potential source for your paper, how do you know if a source is useful or not? How do you know if a source is credible?

7. When you choose a source for your paper, what makes you decide to keep it or move on without using it?

8. How far into a source do you read before choosing something to include in your paper? Is it different for short sources and very long sources?
9. During the search process, do you tend to prefer primary sources or secondary sources? To clarify, primary sources are the first reports on data or original documents, and secondary sources tend to interpret, analyze, summarize, or paraphrase the original information. A medical study from Princeton would be the primary source, where WebMD, Wikipedia, and news articles would be the secondary sources.

   a. Why do you prefer primary/secondary sources? What is it about them that is helpful to you when you research and when you write?

10. When you add the source to your writing, how do you typically do it? Do you quote it, summarize it, paraphrase it, reword it? (Whichever one(s) the participant chooses, ask them how they define that: How do you define summarizing?) If they mention summarizing or paraphrasing, ask: When you summarize or paraphrase, do you keep some of the sentence structure of the original, do you move things around and change it completely, or what does that look like when you do it?

   a. (Ask why they do it that way, if it’s not built into their answer.)

11. Is there anything else about the information you use as a writing student that would be helpful for people to understand?

References


Asking the Right Questions


Chapter 7
ASKING THE RIGHT QUESTIONS
Using Interviews to Explore Information-Seeking Behavior

M. Whitney Olsen and Anne R. Diekema

ABSTRACT
This chapter reports on an interview-driven qualitative research study of first-year writers’ information-seeking behaviors. Informed by a synthesis of literature from the humanities and information science, we arrived at key exploratory findings by recruiting eleven first-year writing students from two universities (five at one and six at the other); interviewing them using a semistructured methodological approach; and processing the transcribed interviews using thematic analysis (Boyatzis 1998). The study indicates that students continue to be Google dependent and to prefer secondary sources. They demonstrate a behavior we call funneling as they conduct their information searches (beginning with expansive search terms and moving toward more specific terms and expectations at the end of their research) as well as reliance upon people as information sources, favoring friends and family members over faculty and information professionals.

INTRODUCTION
In 1993, Charles Schroeder wrote, “I am suggesting that an overall understanding of how students learn and where they are in the process can help us meet the needs of the new students who sit in our classrooms” (Schroeder 1993, 26). His suggestion is as true now as it was more than twenty years ago: as teachers, we must understand our ever-changing groups of students in order to help them. Today’s writing students are mired in a conflicting world of computers and pens, smart phones and paper, and digital and physical information. Before writing
instructors can ask students to research, it is imperative to understand their information behavior. In their article “Information Behavior,” Karen Fisher and Heidi Julien write that 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 and Julien 2009). That description provides a basis for the research described in this chapter.

Information behavior is fluid and context dependent (Attfield, Blandford, and Dowell 2003, 435; Boyd 2004, 82); different user groups exhibit different information-seeking behaviors (Boyd 2004, 82). First-year writing students comprise a large and diverse information-user group dispersed across the United States. These facts make this group particularly compelling to study in terms of information behavior since their writing classes, in many ways, are representative of their campuses and the undergraduate information user group as a whole. In spite of previous research (e.g., Downs and Wardle 2007; Li and Casanave 2012), we still have much to learn about first-year writing students’ information behavior and undergraduate students’ information use in general. Yet instructors are repeatedly challenged to teach students information skills without an empirical understanding of their students’ contexts or practices. This chapter introduces a small pilot study designed to revisit questions from earlier research about the information-seeking behavior of first-year writing students. It is our hope that explicit discussion of our research methods will provide a foundation for future researchers to replicate or expand the study and that the findings themselves—especially where they correlate with findings from other studies—will provide writing instructors with a better understanding of the information-seeking strategies of their students and the pedagogical strategies they might adopt in response.

FRAMEWORK

Jamieson and Howard (2011) note that how students research and cite is underresearched, especially as such practices relate to the rapidly expanding role of digital information. While it is generally assumed that all the information readily available on the Internet has increased, a parallel increase in plagiarism has been proven difficult to measure (Walker 2010). What is clear, however, is that undergraduate students still cite books and journals from local library collections (Hendley 2012; Jamieson 2016). Thus, we present a framework for understanding
the information-seeking behavior of undergraduates based on literature from information science and the humanities. For the purposes of this chapter, we define university writing courses as required, general education, lower-division writing classes aimed at teaching incoming college and university students to write in formal and/or academic modes (e.g., first-year composition, freshman writing, and so on). This study focused on students enrolled in classes that required them to conduct research for their writing assignments. With online information resources such as digital libraries, websites, and blogs playing a more prominent role among all 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 nondigital information-seeking behaviors. This study investigated the following questions:

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

METHODS

Basic Description

This study draws on qualitative methods of data collection and analysis. We selected naturalistic methods, interviews in particular, because we felt they were the best way to gather exploratory data that would reveal both students’ search and use processes, as well as the context for that process on a granular level. We gathered data through eleven-question semistructured interviews (see app. 7.A) at two large public universities in the United States in the spring of 2012. We chose semistructured interviews because this approach allowed more flexibility than fully structured interviews while still providing uniformity of the data we collected. The data for this research study were collected in the context of a class, which resulted in rich data because the students were in the process of searching for information to write their papers. The drawback to holding in-person interviews was a smaller sample size, which didn’t necessarily allow us to generalize these findings to the entire population of first-year writing students.

Eleven students volunteered to participate, five at institution 1, and six at institution 2. All interviewees were white; seven were male,
and four were female. To preserve as much of the instructional and task-orientation context as possible, all interviews were conducted on students’ respective campuses. The interviews were conducted with individual participants in a private room; one researcher interviewed the student and the other observed the interview via Skype (videoconferencing software), asking 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. We employed thematic analysis and an inductive approach to analyze students’ responses to the interview questions (Boyatzis 1998). This process involved transcribing the audio recordings of student interviews, during which process we took note of interesting phenomena and trends, which informed our initial coding scheme. After the transcription process, we used the initial coding scheme to code the transcribed interviews. The coding scheme was extended with additional codes as needed, and the researchers clarified the different codes to achieve consistency. As such, this study used inductive codes, derived directly from the interview data, developed from the bottom up (Boyatzis 1998).

Expanded Discussion of Methods

To arrive at these methods, we first developed our interview guide (see app. 7.A) based on the research questions that shaped the study. Next, both researchers identified a suitable quiet, private location to interview participants. At institution 1, the researcher used her office. At institution 2, where the researcher shared an office, the researcher requested a room from her department and was granted one in the conference room of the department’s main office.

Students who were enrolled in a single class at each institution self-selected for participation in this study. At institution 1, the researcher solicited student participants by contacting an instructor in the English department by e-mail, who then advertised verbally in one section of first-year writing and collected sign-ups by e-mail. Students at institution 2 were solicited via e-mail by their instructor, one of this study’s researchers, and invited to use a website to choose an interview date and time. At both institutions, students were offered a nominal amount of extra credit, with additional opportunities for extra credit existing in both classes.

Next, the researchers followed a standard procedure to prepare for the interviews. For each interview, the researcher printed a clean copy of
the interview guide, leaving space on the page for notes, which we hand-wrote on the page as needed. Each researcher turned on her computer, then opened and tested the audio-recording software. We used Audacity, a free audio-recording and editing package available at sourceforge.net. Then, the researcher logged into Skype for the other researcher to attend the interview in both audio and visual formats.

When the student arrived, the researcher welcomed the student, explained the purpose of the research, provided and explained the informed-consent form and asked the student to sign it, then started the audio recording. The interview followed a semistructured format, with the interviewer asking a question from the guide, allowing the student to respond, then asking follow-up questions or probing certain points further as needed. When the interview was completed, the researcher turned to the second researcher attending via Skype and asked if there were any questions they would like to pose. Once the interview was over, the interviewing researcher ended the audio recording, thanked the student, offered a candy bar as thanks for their help, and accompanied them to the door.

Once all participants had been interviewed, the researchers listened to the recordings using headphones and typed up the interviews verbatim in word-processing software. Doing our own transcriptions had the benefit of getting us much closer to the data than we could have if we had paid others to transcribe for us. When transcriptions were complete, we met to discuss emergent themes, inspired by the methods outlined by Richard Boyatzis (1998) and the detailed knowledge of the interviews that developed from the intensive transcription process. Arriving at a consensus for a theme allowed us to define it as a code, which was added to a digital coding sheet in a word-processing program. We used the first coding sheet to locate examples of the codes in the interviews, and as additional codes emerged, we met, arrived at a consensus, and added the code to the coding sheet and did additional coding passes of the transcriptions already analyzed. When all transcriptions and codes were exhausted, we concluded our analysis.

*Limitations of This Method and Recommendations for Follow-Up Studies*

Data were collected on students’ campuses, in academic buildings and rooms, and in the case of institution 2’s students, by their instructor. It is possible 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 the students’ peers or researchers from other institutions.

A larger sample size from more sites would help balance any skew caused by location, institutional practices, or policies or pedagogical interventions by individual faculty or librarians. This study was small and basically exploratory; future studies might replicate it in different populations, with larger sample sizes and/or using other questions or methods.

We interviewed eleven first-year writing students from two large, public universities in the United States regarding their information behavior. The small sample size and qualitative methodology were intended to capture as much of writing students’ information-seeking context as possible, but what we gained in nuance we lost in scale. While it is not possible to generalize these findings to larger populations of first-year writing students and undergraduate students, this approach provides an important exploratory snapshot into the world of undergraduate researchers in the second decade of the twenty-first century, building on and updating earlier studies and suggesting areas for further research.

The qualitative nature of our research does not lend itself to meaningful numerical data but is best understood within the larger categories that identify trends and areas for further research. Future researchers might add a larger-scale survey to interviews, as does Project Information Literacy (see Head and Eisenberg 2009), or expand the model of focus groups and individual follow-up interviews (Valentine 1993) to multiple sites.

**SUMMARY OF FINDINGS**

Although we asked eleven interview questions (see app. 7.A), and follow-up questions where relevant, our goal was to answer the three broad questions discussed above. Approaching our findings in this way offers an opportunity to imagine local studies on one aspect of information literacy, a concept that might block or facilitate research behavior (see Serviss and Jamieson, interchapter 3 in this volume, XXX–XXX), or relevant pedagogies. The findings replicate and update prior research, as shown in the detailed discussion of findings later in this chapter.

1. Where Do Undergraduate Writing Students Go for Information?

Our thematic analysis turned up interesting phenomena and trends. These emerged from the data and led to sometimes surprising findings, such as a heavy reliance on friends and family members in the
information-seeking process. When looking for sources, 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. Only a few students reported using physical libraries, librarians and information professionals, content experts, books, or magazines, a significant update from research conducted at the beginning of this century, such as that by Fescemyer (2000) and Rowland and Rubbert (2001), which found that students are strongly attached to print materials, especially books. This progression is reflected in the literature, with studies published in 2005 finding students split between searching for information digitally and physically (Callinan 2005; Twait 2005) and more recent research correlating with our findings (Head 2013).

2. 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 “always” known about or been taught about in their high-school or college classes. 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. First-year writers largely began their search processes by casting a wide net, typing in their topic in its broadest form, such as childhood obesity, or war in Iraq. Their search terms sometimes became more specific as they uncovered more information in the course of their search or if something in particular piqued their interest.

3. 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 they do because they are familiar and accessible. Once students feel comfortable using an information resource, they use it regularly and 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 they feel they clearly understand, and these are typically secondary sources. One way to understand this trend is to imagine students’ neglect of sources as a combination of ignorance and unwillingness to venture outside the information resources with which they are comfortable or to adopt new information-seeking behaviors.
In general, weaknesses in first-year writing students’ information behavior appear to be their heavy reliance on a limited number of information resources and their tendency to engage with only part of these resources; constraints on their time and their reluctance to invest too much time in their writing assignments; inability to generate productive searches; dependence on family and friends as information sources while ignoring librarians and faculty; and employment of easier-to-use (secondary) source types. Such limits suggest first-year students have yet to grasp the concept of research as inquiry or indeed any key aspects of information-literacy instruction. Dedicated lesson plans and course activities in composition courses could form a significant part of the solution to these weaknesses (see for example the recommendations in Head (2013) based on Project Information Literacy research). More research is needed to develop adequately complex and practical plans to assist first-year writers as the large and omnipresent group they are.

**Detailed Discussion of Findings in the Context of Prior Research**

Our findings for this population of FYW students are in line with findings in other studies of undergraduate students more generally, and while we did not replicate the research questions in other studies, we did design them to be in dialogue with and, where relevant, update other research along the lines of the representation of RAD research as a process articulated in this collection (see Serviss, introduction to this volume, XXX–XXX). Students in our study grounded their information-seeking behaviors in the Google search, appearing to operate in distinct comfort zones developed from the instruction they’d received in various classes. They preferred secondary sources, which they often did not read fully. They reported being nervous about their use of *Wikipedia*, yet they used it anyway. We also found that people who could serve as information sources comprised a major part of students’ information-seeking behavior, but that the people consulted tended to be friends and family members; faculty and information professionals were largely absent. Students also demonstrated limited understanding of citation and plagiarism when summarizing and paraphrasing sources. Below is a fuller discussion of our findings and the other studies that they confirm or update.
The “Google Generation” Strikes Again

The students interviewed in this study reported research strategies that align with those found in other studies (most specifically Head 2013; Lee 2008; McClure and Clink 2009; Rowlands et al. 2008). This generation of students 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 went to find information. Students were also highly unified in their reasons for using Google as one of their primary resources for information. One student summarized other 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 there were other (“more scholarly,” as student 6 put it) ways to find information. In addition, 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”

Our findings were also in line with those of earlier studies in that the students reported exhausting their searches once they had reviewed the information options they had used before rather than looking for new places to find information (Lee 2008, 214; Kim and Sin 2011, 180–84; Timmers and Glas 2010, 64; Warwick et al. 2009, 2412). Students probably only perceived that they had exhausted their sources, however, as four students admitted there was probably more information on their topic in the source but that they were unsure of how to locate it. Students in this sample used a relatively limited repertoire of information resources, primarily Google, news websites, friends and family, class notes, and select databases through their institution’s library website, all of which appear to represent a distinct “comfort zone” in which they operated. Students tended to describe a linear process as they worked through their selected resources for information, starting at their preferred information resource—for all but one, Google—and proceeding to their next favored resource when no more satisfactory options could be found (students 1 and 3–11). They reported that when they felt they had enough information (usually, the minimum number of required sources for their paper), they simply stopped looking for any more information.
Use and Fear of Wikipedia

Michelle Twait 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 decreasing order of importance) were reputation or credibility; convenience; and format, type, or genre (Twait 2005, 569–70). Hur-li Lee arrived at similar findings three years later (Lee 2008, 214–16). Kyung-Sun Kim and Sei-Ching Joanna Sin studied the selection criteria students claimed to use and compared them with the methods they actually used based on characteristics of the sources they finally selected. From a list they provided as part of the study, Kim and Sin found students’ favored criteria to be accuracy and trustworthiness, ease of accessibility, ease of use, cost (whether the resource is free or not), 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 (Kim and Sin 2011, 184–85). In all of these studies, familiarity was high on the list, and for current students, perhaps the most familiar resource is Wikipedia. Alison Head’s more recent survey of 1,341 first-year students reports that while students describe moving away from Google and Wikipedia as they progress through their education, “learning to navigate their new and complex digital and print Landscape” (and struggling in the process), many others report that “they still relied on their deeply ingrained habit of using Google searches and Wikipedia, a practice that had been acceptable for research papers in high school” (Head 2013, 3). These findings mirror those revealed in our study.

Most students in our study reported that they had explicitly been discouraged or even forbidden to use Wikipedia as a resource of information in their writing by their high-school teachers and/or college instructors and professors. As a result, students were anxious about accessing Wikipedia in the course of their research, all the while feeling comfortable with the generalness of its content. 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 their teachers as disapproving of the site. This cautious use of Wikipedia was also reported by Lim, who observed
that students use Wikipedia in the initial stages of their information-seeking process but fail to cite it (Lim 2009, 2200).

**Engaging with Sources**

Jamieson and Howard (2013) found that first-year writing students largely used academically appropriate sources in their papers (e.g., journal articles, books, book chapters, government documents, etc.), but these sources were used selectively. For example, 69 percent of the research had been drawn from the first page (46 percent) or second page (23 percent) of the source (see also Jamieson, this collection). Our pilot study further investigated both these findings by exploring the degree to which students engage with the information they choose. When asked question 8 (How far into a source do you read before choosing something to include in your paper? Is it different for short sources and very long sources?), students responded that they would “try” to read the entirety of the piece of information, but most admitted they limited the amount of time they spent on their essays, which subsequently limited how far they read into a source before choosing something and incorporating it into their papers. In many cases, rather than trying to find the best piece of information for their papers, students simply used the first they came across. Student 4 described some of the limitations in delving 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 their sources in their entirety. Student 9 even described printing all his sources and highlighting and annotating them.

**Funneling**

Question 2 on our interview guide explored why students engaged so briefly with their sources. We found that students searched in a way we describe as funneling. Students tended to begin their research with expansive search terms to find basic information on the subject. Toward the end of their research, they had more specific search terms and source expectations. Students tended not to browse for topics for their essays, instead choosing them ahead of their writing and information-search processes. Armed with a topic, students then engaged in browsing behavior, typically using the simplest form of their topic as their search term, such as “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, in their perception, to turn up any more useful information, did students begin to add to or change their search terms.

Student 11 summed up his 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 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 their search process shape their perspectives. 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 worrisome because if this is the case, students are apparently choosing their sources out of convenience, learning little about their topics in the process of writing their essays; they are supporting limited repertoires of knowledge with limited information, found in limited resources of information, a finding that confirms what researchers such as Twait (2005, 567–73) and Lee (2008, 211–19) found.

Social Information Seeking

The students in Twait’s qualitative study reported that in their information searches, they infrequently or never consulted people—whether friends, faculty, or librarians (Twait 2005, 571); however, others have found that students do appear to consult their peers during their information-seeking pursuits and do so more often than consulting faculty and librarians (Baro, Onyenania, and Osaheni 2010, 114–15; O’Brien and Symons 2005, 421). This finding may be the result of local contexts or the fact that not all students studied were first-year students, but it is an issue worth further exploration.

In our interviews, students readily and easily discussed the people involved in their information seeking, and when they chose to talk to people for information, students went to family members and friends unless being prompted or required to contact members outside their social circles by their teachers. Student 10, when asked whether she would cold-contact someone without being required to by an instructor, firmly replied that she would not; she would only contact friends and family in the course of her usual information seeking.

Students reported that they liked referring to friends and family members for a variety of reasons. Student 4 observed that his family members
could be trusted to know good information on the kinds of subjects he tended to write on. 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 additional guidance and instruction is needed from writing instructors to guide their students to information professionals who could help them immensely in their search process (Head and Eisenberg 2009, 15).

Avoiding Plagiarism

A key finding of the Citation Project (e.g., Howard, Serviss, and Rodrigue 2010, 177–92) was that students tend to patchwrite (see Jamieson’s “The Evolution of the Citation Project,” this volume). In Rebecca Moore Howard’s 1993 article, she introduced the term “patchwriting,” describing it as “copying from a source text and then deleting some words, altering grammatical structures, or plugging in one-for-one synonym substitutes” and arguing that patchwriting is “a valuable composing strategy in which the writer engages in entry-level manipulation of new ideas and vocabulary” (Howard 1993, 1). She called on faculty and administrators to stop classifying patchwriting as plagiarism, a lead the Citation Project and the Council of Writing Program Administrators have followed, classifying it as “misuse of sources” but not plagiarism (Council of Writing Program Administrators 2003). Our interviews reveal that this distinction has not reached the majority of students.

Students reported that they are well aware that they should not plagiarize and that they make clear attempts to avoid plagiarizing but struggle to incorporate sources, a finding also reported by Head (2013). Like the students in Head’s study, students in this study reported needing a fuller understanding of the distinctions among quoting, paraphrasing, and summarizing sources and how to cite them. We asked students whether they tended to quote, summarize, or paraphrase in their writing (question 10). If they responded that they summarized or paraphrased, we probed the nature of that practice further by asking how much of the original sentence structure they preserved when they did so. Approximately half the students described keeping the original structure of the source to a large degree (generally defined as misuse of sources). One notable case was a student who believed that simply changing words in a sentence was plagiarism but still didn’t fully
understand how to paraphrase. Student 9 stated, “I completely change it when I paraphrase, I mean, it’s plagiarism if you don’t and so I just usually completely change it, and I won’t cite ‘em, I’ll just use it, the information I found, and I’ll just completely write it in my own words.” Student 9 also stated, “I don’t really like to summarize, ‘cause I never really got how that . . . I know how to summarize it, but I never really got how you cite that.” While students on the whole seemed to understand the proper way to attribute quotes, their understanding of summary and paraphrase was highly nuanced and seemingly incomplete.

**Conclusion**

While some of the findings of this study are inconclusive because of the small sample, many of our findings align themselves with and expand upon existing perspectives of undergraduates and first-year writers, suggesting that earlier research findings and findings from other small studies are generalizable in key areas. We hope others will build upon our research and expand the study to more students, especially first-year students, and more institution types. Such research 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 develop appropriate pedagogies, policies, and resources. But in the meantime, we believe these findings will be of assistance to faculty and librarians helping first-year composition students develop their information-literacy skills, given that these students are still at the start of their academic careers.

**Acknowledgments**

The authors would like to thank the eleven students who volunteered their time and thoughts and Russ Winn for inviting his students’ participation. We are also indebted to Brock Dethier and Keith Gibson for their terrific feedback on early drafts of this chapter.

**Note**

1. Due to differences in usage of terminology between the humanities and information sciences, this chapter 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 person, journal article, book, or webpage.
APPENDIX 7.A
INTERVIEW GUIDE

1. The first thing I want you to share is a story. Think about research papers, that is, the essays where you have to incorporate outside sources. Think about ones you have written for your college-level English courses. If it helps, think about the next essay you have to write, too. Tell me the story of what happens from the time you get the research paper assignment to the time you turn it in. As necessary during the story, inquire about where information/research/sources came from.

2. When you do research for your English papers, do you go in search of something specific, or do you tend to browse until you find something? Can you try and describe what your search process is like from beginning, when you start looking for information, to end, when you have everything you need?

3. Generally speaking, where else do you go in terms of gathering research or sources for your English papers, thinking about both people and places?
   
   List sources here:
   a. Are there any other places you go for information? For instance, digital libraries, databases, library websites, news sites, Wikipedia, or other websites, for example?
   b. I’m not familiar with _________ (information place). Can you describe it briefly for me?

4. Why do you use ______ (source) for your writing research? (What is it about those information places that you find useful? What is special about them?) Go through each source student mentioned, asking why student uses each source.

5. How did you find out about these sources of information? (Were you taught how to use them? Did you hear about them from friends or roommates? Forums? Study guides? Just happen upon them?) Go through each of the sources the student volunteers to learn how s/he found out about them.

6. When you come across a potential source for your paper, how do you know if a source is useful or not? How do you know if a source is credible?

7. When you choose a source for your paper, what makes you decide to keep it or move on without using it?

8. How far into a source do you read before choosing something to include in your paper? Is it different for short sources and very long sources?
9. During the search process, do you tend to prefer primary sources or secondary sources? To clarify, primary sources are the first reports on data or original documents, and secondary sources tend to interpret, analyze, summarize, or paraphrase the original information. A medical study from Princeton would be the primary source, where WebMD, Wikipedia, and news articles would be the secondary sources.

   a. Why do you prefer primary/secondary sources? What is it about them that is helpful to you when you research and when you write?

10. When you add the source to your writing, how do you typically do it? Do you quote it, summarize it, paraphrase it, reword it? (Whichever one(s) the participant chooses, ask them how they define that: How do you define summarizing?) If they mention summarizing or paraphrasing, ask: When you summarize or paraphrase, do you keep some of the sentence structure of the original, do you move things around and change it completely, or what does that look like when you do it?

   a. (Ask why they do it that way, if it’s not built into their answer.)

11. Is there anything else about the information you use as a writing student that would be helpful for people to understand?

References


Sentence-Mining: Uncovering the Amount of Reading and Reading Comprehension in College Writers’ Researched Writing

Sandra Jamieson and Rebecca Moore Howard

The Writer’s Guide and Index to English, a college writers’ handbook in wide circulation at the middle of the last century, articulates an ideal for students’ work from sources that endures today:

A student—or anyone else—is not composing when he is merely copying. He should read and digest the material, get it into his own words (except for brief, important quotations that are shown to be quotations). He should be able to talk about the subject before he writes about it. Then he should refer to any sources he has used. This is not only courtesy but a sign of good workmanship, part of the morality of writing. (Perrin 1959, 636) [Au: Emphasis in original?]
This brief statement buried deep in an antiquated writers’ handbook is remarkable for several reasons, not least of which is its crisp, accessible presentation of a complex truism of academic writing. The idea that writers must be able to “talk about the subject” is at the heart of the notion of writing as “conversation” that is repeated in scholarly articles, outcomes statements, and the language of current pedagogy. While prewriting activities use writing as a means of discovery, that process of discovery is embraced by many as a way to enable students to be able to “talk about” their topic before they begin to construct arguments and papers. Few of us would feel the need to say this today, but studies of students’ researched papers suggest that we should.

Perrin’s (1959, 636) statement is remarkable because of its association of “get[ting] it into his own words” with understanding—“digesting”—the source. The passage excludes copying from the realm of composing. When one copies, says the *Writer’s Guide*, one is not composing. One is merely copying. Note that when he speaks of “copying,” Perrin is not talking about unattributed copying, but all copying, including attributed quotation. When one copies, he says, one is not talking about the subject, but merely transcribing others’ talk. This claim is complicated. Some academic disciplines value the transcription of others’ talk, calling for quotation of significant text rather than paraphrase. Others reject quotation, calling for a synthesis of ideas and findings rather than an emphasis on specific words. Yet across this difference is a shared desire for students to understand their sources. If students are quoting or paraphrasing one or two sentences at a time, they are not “digesting” the ideas in the source and using those ideas to compose papers and reports of their own. They are, in Perrin’s terminology, copying.

The field of college writing instruction values and teaches the skills of paraphrase and summary—the “digesting” of texts considered by Perrin to be integral to composing from sources. Faculty outside of writing studies also value these writing skills in discipline-specific and general student writing. Conducting cross-disciplinary research on the ways college instructors experience intellectual property and represent
it to their students, Lise Buranen and Denise Stephenson describe a chemistry instructor who encourages his students to paraphrase rather than quote, in part to increase their understanding of the source text (2008, 73). The belief that the act of paraphrasing or summarizing helps writers understand their sources is articulated in faculty development work and guides to research, and it is frequently asserted in writing studies scholarship and textbooks. It seems to be a disciplinary or even academic given; nowhere have we seen a compositionist challenge this tenet. We have ourselves promoted the value of summary and paraphrase in our teaching, our work as writing program administrators, and, beginning as early as 1992, our scholarship (Howard 1992).

Our experiences as teachers and administrators of college writing lead us to fear that Perrin’s (1959) last principle—that copying is not composing—is being obscured by our current culture of plagiarism hysteria. In their rush to discourage plagiarism, college instructors across the disciplines may be so concerned about students’ successful enactment of the mechanical process of acknowledging copying that the rhetorical and intellectual dimensions of cross-textual work fade into the background. And when those instructors assess student writing, the result may be that students are rewarded for successful citation out of proportion to the rhetorical and intellectual quality of their texts. Instructors may not always be noticing whether or how much students are, in Perrin’s formulation, copying from sources instead of composing from them.

In order to change this dynamic, we first need to know how much students actually use paraphrase and summary in their writing from sources. We also need to know how much they patchwrite, which the Citation Project and others define as working too closely with the language and syntax of the source when they attempt to paraphrase. If we are to explore student understanding of texts, we need to see what they do with their sources. Working from multi-institutional research known as the Citation Project, this chapter provides data that begin to answer that question.
Background

A study of student source use by Rebecca Moore Howard, Tricia Serviss, and Tanya K. Rodrigue (2010) found that students worked with sources at the sentence level instead of representing the larger ideas in the source through summary. Expanding on Diane Pecorari’s study (2003) of the ways nonnative speakers of English incorporate sources, they explored the extent to which college students’ researched writing incorporated four source-use techniques: copying, patchwriting, paraphrasing, and summarizing. Their study found no summary in the 18 researched papers analyzed. It also found that within those papers, it “is consistently the sentences, not the sources, that are being written from” (Howard, Serviss, and Rodrigue 2010, 189). This research, based at one institution, prompted us to ask more questions and design a multi-institutional quantitative study of student papers produced in the first-year writing course or course sequence at 16 U.S. colleges and universities. Those institutions were chosen to represent the entire geography of the country and its most common types of institutions.

As with the single-institution study, the multi-institutional analysis found that the most common form of citation was direct quotation (46 percent of all of the citations in the 174 papers in this study), followed by paraphrase (32 percent) and patchwriting (16 percent). Only 6 percent were summary—even if we define that term generously. In other words, 94 percent of the citations were created by students working with their sources at the sentence level and not demonstrating that they had “digested” what they read. But these data were not, in fact, our most compelling findings. In addition to not summarizing their sources, our data suggest that many of the students whose papers we analyzed may not even have read beyond the first few pages of the source.

Our research is based on some essential principles. The first is that as scholars and administrators we need to base our claims about what students do on solid data. The contemporary obsession with plagiarism
is possible because those who report and repeat it are working from experience, anecdote, and over-generalized claims about student integrity. For example, it seems logical to assume that the expansion of the internet would increase student plagiarism, especially if one is predisposed to believe that students will cheat if given the opportunity. Yet we do not have data about the extent of plagiarism before the internet, so we have nothing to compare with post-internet plagiarism. All we know is that the internet makes it easier to catch plagiarists. Without meaningful data, anecdote and beliefs about students will continue to dominate the conversation. Similarly, although writing teachers spend considerable time teaching summary and paraphrase, and alone or with librarians emphasize information literacy and source retrieval, we could not evaluate our success until we had local and multi-institutional data to tell us how our students used that information.

The second principle of the Citation Project is that to be meaningful, data needs to come from a wide variety of institutions. Those institutions need to be different in kind and geographical location. While data from single institutions are invaluable for assessment and as pilot research to allow the formulation of more nuanced questions and more efficient data processing, they cannot be used to make broad generalizations about what students do or do not do. In order to be able to speak meaningfully about the trends in student writing in the United States, we undertook to compile a data-based portrait of how students in writing courses work with their sources. That portrait is drawn from the work of 174 students at 16 colleges and universities from a wide geographical distribution in the U.S. Participating institutions are located in 12 states (Alabama, Colorado, Georgia, Idaho, Indiana, Kansas, Massachusetts, New Hampshire, New Jersey, New York, Texas, Washington) and include community colleges, Ivy League institutions, liberal arts colleges, religious colleges, private colleges and universities, and state colleges and universities. The goal of the Citation Project is to collect and share multi-institutional data that will inform the work of scholars, teachers, and administrators and the design and assessment of pedagogies and policies.
The Citation Project also works on the principle that researchers in the field of writing studies must adopt or adapt methods of quantitative analysis already established in other fields if they seek to develop an overall understanding of what students do when they write. Since Chris Anson’s call for data-based research in writing in his keynote address at the Council of Writing Program Administrators conference in 2006, the field has seen an increase in this kind of research, and we were also motivated by that speech (published in expanded form in 2008). It is still somewhat unusual to attend sessions at conferences where scholars are presenting data generated by SPSS (Statistical Package for the Social Sciences; the leading computer program for social science-based statistical analysis), but this trend is increasing and we are no exception. Our research uses citation context analysis, a set of research methods established in the fields of applied linguistics and information studies, and adapts it to the field of writing studies. We also employ qualitative and rhetorical methods with which our field is more familiar. Using qualitative data to present an overall picture and generate questions and using quantitative data to explore those questions allows deep and nuanced understanding. And as the qualitative analysis generates more questions, the cycle repeats.

**Methods**

**Source and Paper Coding**

Phase I of our research focused on the researched writing produced in standard first-year writing courses. We invited participating institutions to send us at least 50 researched papers of seven or more pages written in at least four sections of first-year writing taught by at least three different instructors. Those papers were randomized; then we rejected any that were too short or whose sources we could not find. We gathered papers from three institutions in Spring 2008 and the remaining 13 in Fall 2009 and Spring 2010, reporting our findings from those first three institutions in a number of presentations while we collected and analyzed the remaining papers. This was a very labor-
intensive process that included a team of 25 compositionists, both faculty and graduate students, working alone and in pairs.6

Our database includes 50 pages of student writing—between 1,000 and 1,150 lines of prose—from each institution. So between them, the 16 participating institutions gave us 800 pages of student research, a total of 17,600 lines of prose. In most cases, those 50 pages came from pages two through six of each of 10 papers. By beginning on the second page, we were able to focus on the source use in the body of the paper where the students were most frequently engaging with researched material. The coded pages in each set of papers from each campus included an average of 119 citations to 58 sources, which combined to give us an overall total of 1,911 citations to 930 sources. We found those sources,7 coded them by type, and then coded the ways they were used in the student papers. In the interest of space, the specific methods we use to code papers and sources are described only briefly here; however, they are available in much more detail on our website (www.citationproject.net), where our training materials and handouts may also be found.8 Because the citations we studied came from only 10 to 12 papers per institution, our findings for each institution are of limited use when taken alone; however, our project was to look for patterns across institutions. If we found those patterns and if the data from each institution fit the general pattern, the data would be useful locally and also as a way to trace overall trends.

Our data concerning sources selected and used will be published elsewhere as part of our analysis of the information literacy practices of the students in our study. (All publications are listed at www.citationproject.net.) This chapter focuses on the ways students incorporated information from their sources into their papers. The descriptions we used for each of these types of source uses were described for paper-coders in Table 5.1.

While it is easy to define what we mean by “copied” and “quotation,” the other three terms are not so straightforward. In 1993, Howard defined patchwriting as “[c]opying from a source text and then deleting some words, altering grammatical structures, or plugging
in one-for-one synonym-substitutes” (233); however, this definition implies an intentionality that we have not always found to be the case. For this research, we set out to define the term as neutrally as possible. We felt compelled, however reluctantly, to quantify paraphrase and summary. We did not find ourselves counting words very frequently, though. Passages that were patchwritten generally used significantly more than 20 percent of the source material (more than 50 percent most of the time).

In contrast, because our definition of summary requires a reduction by 50 percent of the material in at least three consecutive sentences, passages of summary generally include significantly less than 20 percent of the language of the source. Brown and Day (1983) report on six “rules” that writers follow when summarizing: Two involve deletion of material from the source text; two involve generalizing from specifics in the source text; and two require invention of sentences that capture the gist of one or more paragraphs (178). Although they were not part of our coding guidelines, these rules did seem to be at play in text coded as summary.

<table>
<thead>
<tr>
<th>Passage copied exactly, but not marked as quotation</th>
<th>Exact copying with a citation but no quotation marks or indentation to signal that this is quoted material. (May include minor errors in transcription.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passage copied exactly, marked as quotation</td>
<td>Exact copying with a citation and quotation marks or indentation to signal that this is quoted material. (May include minor errors in transcription and errors in citation as long as the copied material is identified as such.)</td>
</tr>
<tr>
<td>Passage patchwritten</td>
<td>Restating a phrase, clause, or one or more sentences while staying close to the language or syntax of the source.</td>
</tr>
<tr>
<td>Passage paraphrased</td>
<td>Restating a phrase, clause, or one or two sentences while using no more than 20 percent of the language of the source. Paraphrase does not necessarily involve significant reduction in length.</td>
</tr>
<tr>
<td>Passage summarized</td>
<td>Restating and compressing the main points of an entire text or at least three or more consecutive sentences in the text, reducing the summarized passage by at least 50 percent and using 20 percent or less of the language from that passage.*</td>
</tr>
</tbody>
</table>

*NOTE: This 20 percent does not include accurate synonyms, articles, prepositions, proper names, technical terms, or other keywords. This 20 percent does include words whose morphology is changed (a change in verb tense, for example).
In most cases, patchwriting can be identified with as much ease as can summary once one has read the original source. An example from a student paper in the study demonstrates this in Table 5.2, with marginal coding indicating how the source is being used. In each text, words copied directly from the source are underlined with a single line and word substitutions are indicated with wavy underline.

The student paper from which these extracts were taken includes three citations to material from five paragraphs of a web page produced by NORML, an organization that describes itself as “working to reform marijuana laws” (www.norml.org). The section of the NORML website accessed by the student includes a link to a downloadable PDF of a 57-page report, which is summarized on the pages the student cites; however, the citations clearly reference this website rather than the article. The student works sentence-by-sentence through each of the paragraphs on what prints out as the second page of the three-page source. Two of the three citations to this source are included in Table 5.2

<table>
<thead>
<tr>
<th>Paraphrase</th>
<th>Source text (page 2 of source)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Paraphrase</td>
<td>Evidence of a jump in interest can be seen in a jump from <strong>258 journal articles</strong> that were <strong>published</strong> in <strong>1996</strong> on the subject of <strong>cannabis</strong>, to <strong>over 2,100 studies</strong> that were published in <strong>scientific journals</strong> in <strong>2008</strong> (Recent Research on Medicinal Marijuana).</td>
</tr>
<tr>
<td></td>
<td>A keyword search using the terms “cannabis, 1996” (the year California voters became the first of 14 states to allow for the drug’s medical use under state law) reveals just <strong>258 scientific journal articles published</strong> on the subject during that year. Perform this same search for the year <strong>2008</strong>, and one will find <strong>over 2,100 published scientific studies</strong>.</td>
</tr>
<tr>
<td>(2) Patchwriting</td>
<td><strong>Most importantly, investigators are now studying the anti-cancer properties of cannabinoids.</strong> There is an increasing amount of preclinical and clinical data that conclude that cannabinoids stop the spreading of specific cancer cells through programmed cell death and the prevention of the formation of new blood vessels (Recent Research on Medicinal Marijuana).</td>
</tr>
<tr>
<td></td>
<td><strong>Investigators are also studying the anti-cancer activities of</strong> cannabis, as a growing body of preclinical and clinical data concludes that cannabinoids can reduce the spread of specific cancer cells via apoptosis (programmed cell death) and by the inhibition of angiogenesis (the formation of new blood vessels).</td>
</tr>
</tbody>
</table>

**STUDENT CITATION:**
5.2. The third is another example of patchwriting on the same page of the student paper.

The material in the first block of student text in Table 5.2 meets our definition of paraphrase (“Restating a phrase, clause, or one or two sentences while using no more than 20 percent of the language of the source”). Although this sentence follows the order of the two sentences in the source text and includes some of the same words, the information is reproduced in one sentence that uses original language. The words that are reproduced are mostly single words and many are specific terms, such as “journal article” and “scientific.”

The second extract in Table 5.2 is taken from the next paragraph of the student paper. If we compare the first extract with the second, which we code as patchwriting, we can see the difference between these two ways of incorporating source material. In this second passage of student text, 26 of the 41 words in the source sentence have been reproduced exactly, and another seven have been replaced by synonyms or closely related terms (“cannabis” is replaced by “cannabinoids,” and “growing body” with “increasing amount,” for example). While some words and phrases have been omitted, the student text follows the same order as the source text and does not add anything original to the sentence or the presentation of the information. This fits our definition of patchwriting: “Restating a phrase, clause, or one or more sentences while staying close to the language or syntax of the source.” In addition to repeating words and phrases, the student sentence follows the overall shape of the passage from the source.

Even if the sample of patchwriting in Table 5.2 had been rewritten into a successful paraphrase, it would still be working from just one sentence of the source. We would not, though, be able to see that if we did not read the source material and then track how the student used it.

Inter-Coder Reliability

Coders were placed randomly into pairs so no two coders worked together on all of the papers from a single institution (and at least one of the two coders was from an institution other than the one whose
papers were being coded). Data from their coding was entered into a spreadsheet for each paper, and then coders convened to review their coding and recode as needed, until consensus was reached. Then the information was added to the source-coding information in the SPSS database (PASW Statistics 17).9

Where it occurred, variation tended to come from a form of halo effect: Coders sometimes “gave the benefit of the doubt” to otherwise well-written papers and coded passages as paraphrase rather than patchwriting, or summary rather than paraphrase.10 We found ourselves wanting the students to do well—a very different experience than we have when we set out to “catch plagiarism.” Once we became aware of this tendency, we adjusted for it and the process of calibration corrected any potential miscoding by requiring coders to “report the evidence, not a rating” as recommended by those who have studied the effect (Thorndike 1920, 29). The lead researchers blind-coded sources and papers to further ensure inter- and intra-coder reliability and very rarely disagreed with a classification in the final, calibrated data.

Findings

The Papers

The majority of the papers in our database are first-year writing research papers with an argumentative thesis in the introduction and sources used to construct and support that thesis. In their study of handouts for research assignments collected from 28 colleges and universities, Alison Head and Michael Eisenberg (2010) found that “although the topics vary, the assignments consistently demand inquiry, argument, and evidence” (2) with 83 percent requiring students to “write a paper that provides supportive evidence from outside sources” (7).

We did not ask institutions to provide the assignments to which the papers we coded responded, but based on our analysis of the papers, we hypothesize that if we had done so, our findings would be similar to Head and Eisenberg’s. Only 54 percent of the assignments in Head
and Eisenberg’s sample left the students to select their own topic, but their sample came from faculty and courses from across the curriculum (6). Given the range of topics in the papers submitted from each of the 16 institutions, we believe that the majority of students in our sample selected their own topics.

**The Data**

Our first research question was focused on Perrin’s (1959) claim that a writer “should read and digest the material, [and] get it into his own words (except for brief, important quotations that are shown to be quotations)” (636). How frequently is it the case that students “get it into [their] own words”? How many times do they choose to paraphrase or summarize their sources as they develop a researched paper, and how often does the paraphrase fall short and become patchwriting instead? Our research did not ask whether students made wise decisions, or why they made the choices they did. We simply coded and counted incidences of each. The data in Table 5.3 show the frequency of each kind of citation among the 1,911 citations we coded.

Reading the table row by row, one quickly sees that when these 174 students cited exact copying, they usually marked it as quotation, either with block indenting or with quotation marks. Only 4 percent of the 1,911 citations were to direct copying not marked as quotation, whereas 42 percent of the citations were to direct copying marked as quotation. Regardless of whether the omission of quotation marks was accidental, what we see is that 46 percent of the students simply tran-

<table>
<thead>
<tr>
<th>Predominant use of source material within the citation</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copy without quotation marks</td>
<td>83</td>
<td>4.34</td>
<td>4.34</td>
<td>4.34</td>
</tr>
<tr>
<td>Copy with quotation marks</td>
<td>793</td>
<td>41.50</td>
<td>41.50</td>
<td>45.84</td>
</tr>
<tr>
<td>Patchwriting</td>
<td>306</td>
<td>16.01</td>
<td>16.01</td>
<td>61.85</td>
</tr>
<tr>
<td>Paraphrasing</td>
<td>609</td>
<td>31.87</td>
<td>31.87</td>
<td>93.72</td>
</tr>
<tr>
<td>Summary</td>
<td>120</td>
<td>6.28</td>
<td>6.28</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,911</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
scribed the words of others. A further 32 percent of all of the citations were paraphrased, and 16 percent were patchwritten. Adding these to the percentage of citations that were to quoted material, we see that 94 percent of the 1,911 citations were written from isolated sentences in the source texts. Only 6 percent of the citations were to three or more sentences that the student writer had summarized.

The data in Table 5.3 present overall patterns of source use within the 1,911 citations; however, these numbers do not tell us how many individual papers included each type of source use—which was our second research question. We answered this question by analyzing individual papers, and that analysis reveals a slightly different pattern. The data in Table 5.4 show how many of the 174 papers included at least one example of each type of source use in the sample coded.

We only coded five pages in each paper, so there may have been other types of source use in parts of each paper that we did not code. This means we cannot say categorically that something did not occur in the paper—only that it did or did not occur in the sample we coded. With that caveat, we see a distinct contrast between the frequency of each type of source use in the 1,911 citations and the frequency within each paper.

<table>
<thead>
<tr>
<th>Type of Source Use Occurring at Least Once in the Paper</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Occurs at least once in pages 2–6</td>
<td>Does not occur in pages 2–6</td>
</tr>
<tr>
<td>Valid</td>
<td>33</td>
<td>141</td>
</tr>
<tr>
<td>Copying not marked as quotation</td>
<td>159</td>
<td>15</td>
</tr>
<tr>
<td>Copying marked as quotation</td>
<td>91</td>
<td>83</td>
</tr>
<tr>
<td>Patchwriting</td>
<td>135</td>
<td>39</td>
</tr>
<tr>
<td>Paraphrasing</td>
<td>71</td>
<td>103</td>
</tr>
</tbody>
</table>

Table 5.4 Analysis of Source Use in Each of the 174 Student Papers
Table 5.3 reveals a total of 120 incidences of summary in the 1,911 citations; however, Table 5.4 shows that only 71 of the papers (41 percent) included any incidences of summary, and of the 103 that included no summary, 18 included no paraphrase either, although seven of them included patchwriting—failed paraphrase. The remaining 11 papers depended exclusively on copying in the pages we coded. Although only 11 papers contained no source use other than quotation, the vast majority, 159 of the 174 papers (91 percent), included at least one quotation. The majority of papers also included at least one incidence of paraphrase (78 percent), but a little over half (52 percent) included patchwriting. Of the students who patchwrote, the majority also paraphrased at least once.

If 41 percent of the papers include at least one summary and 78 percent include at least one paraphrase, we might conclude that the students in our sample are engaging with the material, after all. However, other data complicate this interpretation. Our third question asked where in the source students found the material they cited (see Table 5.5).

<table>
<thead>
<tr>
<th>Page in source from which material is cited</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid Page 1 of the source</td>
<td>885</td>
<td>46.31</td>
<td>46.31</td>
<td>46.31</td>
</tr>
<tr>
<td>Page 2 of the source</td>
<td>443</td>
<td>23.18</td>
<td>23.18</td>
<td>69.49</td>
</tr>
<tr>
<td>Page 3 of the source</td>
<td>151</td>
<td>7.90</td>
<td>7.90</td>
<td>77.39</td>
</tr>
<tr>
<td>Page 4 of the source</td>
<td>100</td>
<td>5.23</td>
<td>5.23</td>
<td>82.62</td>
</tr>
<tr>
<td>Page 5 of the source</td>
<td>73</td>
<td>3.82</td>
<td>3.82</td>
<td>86.44</td>
</tr>
<tr>
<td>Page 6 of the source</td>
<td>48</td>
<td>2.52</td>
<td>2.52</td>
<td>88.96</td>
</tr>
<tr>
<td>Page 7 of the source</td>
<td>31</td>
<td>1.62</td>
<td>1.62</td>
<td>90.58</td>
</tr>
<tr>
<td>Page 8 of the source and beyond</td>
<td>180</td>
<td>9.42</td>
<td>9.42</td>
<td>100.00</td>
</tr>
<tr>
<td>Total</td>
<td>1,911</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>
The majority, 46 percent of the students’ 1,911 citations, come from page 1 of the source. Adding in page 2 takes this percentage up to 69 percent, and a full 83 percent of all of the citations came from one of the first four pages of the source cited—regardless of the length of the source. Only 9 percent of the citations refer to material from page 8 or beyond in the source. Taking this finding into account casts doubt on how engaged the student writers were with the sources they were citing.

Discussion

Misused Source Material—Incorrectly Quoted or Patchwritten Passages

Of the 1,911 citations we studied (Table 5.3), only 4 percent were to material that was cited and copied but not marked as quotation; however, when we look at the 174 papers themselves (Table 5.4) we see that this phenomenon is quite widespread. A total of 19 percent of all of the papers include at least one incidence of direct copying that was cited but not marked as quotation. Similarly, Table 5.3 reveals that within the 1,911 citations, 16 percent were patchwritten from the source; however, as we see in Table 5.4, a total of 52 percent of the 174 papers included at least one incidence of cited patchwriting within the pages we coded. In all, over half of the papers (56 percent), a total of 98 of the 174 papers, included at least one instance of either incorrectly marked quotation or patchwritten prose, and 26 (15 percent) of them included both. These two ways of incorporating source information are designated at best as misuse of sources, and at many institutions they are classified as plagiarism.12

This phase of the Citation Project research works only with decontextualized textual artifacts, so we cannot yet report on student intentions. Our hypothesis, though, is that when writers cite patchwritten material, they are attempting to produce paraphrase. Similarly, we suspect that most student writers who cite a source but omit quotation marks are not intending to deceive. Regardless of intentions, the fact
that over half of the students reproduced the ideas of the source in a copied or patchwritten passage that they cited but did not mark as quotation should give us pause. It suggests that policies defining these forms of source use as plagiarism may need to be revised or at least revisited; the textual evidence suggests that the students were not writing well from their sources, but not that they were attempting to claim authorship of passages they did not themselves compose. The difference between unsuccessful writing from sources and academic dishonesty is an important one.

Data-Mined Source Material—Quoted and Paraphrased Passages

When we focus on academic integrity as the gold standard for assessing students’ use of sources, we spend less time asking what is happening in student papers that use sources correctly. The cumulative percent column of Table 5.3 raises a different issue, one that we consider more significant than misuse of sources. Within the 1,911 citations, 46 percent are to passages that incorporate source material by simply transcribing those sources. In Perrin’s (1959) terms, nearly half the time the students were not composing from sources.

Quotation holds an essential place in academic discourse, bringing multiple voices to bear on the topic at hand, respecting the precise articulation of a source. We use quotation extensively in this chapter. Quotation does not, however, reveal how much the citer has engaged with the cited text. When a writer only copies from sources, the reader does not necessarily know whether or how well the source has been read. And this is a key question in assessing students’ writing from sources.

The use of paraphrase in pedagogy dates back at least to Erasmus (Corbett 1971), and although 78 percent of the 174 students paraphrased at least once in the part of the paper we coded (Table 5.4), paraphrase occurred far less frequently than copying, with only 32 percent of the 1,911 citations being successful paraphrases (Table 5.3). Even if we combine the percentage of successful paraphrase (32 percent) with
unsuccessful paraphrase—patchwriting—(16 percent), we are still left with less than half of the citations reflecting the kind of intellectual intensity David Maas (2002) describes as central to paraphrase. Further, if we review the numbers in the cumulative column of Table 5.3 again, we see that in 94 percent of these 1,911 citations the students were sentence-mining. Copying, paraphrasing, and patchwriting all work from isolated sentences. Only summary works beyond the sentence level.

**Digested Source Material—Summary and Paraphrase**

In their textbook *Writing Analytically*, David Rosenwasser and Jill Stephen (2006) go so far as to assert, “Summary is the standard way that reading—not just facts and figures but also other people’s theories and observations—enters your writing” (117). Judging from the Citation Project findings, Rosenwasser and Stephen are, like Perrin (1959), articulating an ideal rather than describing students’ practice. Summary accounts for only 120 (6 percent) of the 1,911 citations (Table 5.3). While it is true that 71 of the 174 students (41 percent) summarized at least once in their papers (Table 5.4), most of them did so only once. Using Perrin’s terminology, only 41 percent of the papers showed evidence that the student had “digested” any of the ideas of the source by summarizing them. It is important to remember that “summary” here can mean something as small as “summary of three consecutive sentences.” It also includes one-sentence general plot summaries of works of literature that may have been read for the class. Even with that expansive definition of “summary,” we found only 120 incidences of it in 800 pages of student-researched writing (Table 5.3).

**Location of Cited Material Within the Source**

When we saw the data in Tables 5.3 and 5.4, we wanted to think that surely they did not reflect the best of the students’ abilities. Surely, far more often than these data show, the students did understand the source and simply weren’t demonstrating it by paraphrasing or summarizing. One can engage with the entire source even if one only
quotes from it; however, in many such cases we would expect those quotations to be taken from strategic places from within the text. Table 5.5 challenges that optimism. Not only are students deciding to use quotation to incorporate the majority of their source material, but those quotations usually come from the first or second page of the source. Of the 1,911 citations, 46 percent are to the first page of the source, and a further 23 percent to the second page (Table 5.5).

As with our other data, this finding does not prove that students are not reading the entire source. The first two pages of most academic texts provide some form of summary of the material to follow in the form of an abstract or set of introductory paragraphs that include a thesis or findings to be discussed. In this chapter, we have quoted or paraphrased material from the first page of some of our sources, a notable example being our footnote describing the halo effect in research. In most cases, though, we also reproduce material from elsewhere in the source. To provide only a series of thesis statements or major findings is to fail to provide nuance; readers do not know how the thesis was reached, what constraints surround it, or what role it played in the argument of the source. When students do not include that information, at the very least they reveal that they do not understand its significance. We suspect that this lack of understanding may be at the heart of the problem. While some students may not understand what they read, others may simply not understand what will be gained from reading an entire source, when all the “evidence” they need is right there in the introduction. In other words, our data may be revealing that students do not know how to read academic sources or how to work with them to create an insightful paper.

Our data reveal this tendency to sentence-mine from the first two or three pages from each source text regardless of the overall length of that source. While two of the 174 papers do provide quite extensive summaries of an article that is more than six pages in length (one in each paper), and a few more provide plot summaries of works of fiction, very few of the papers quote or paraphrase from several different pages in one source or draw on one or more sources throughout.
Conclusion

When 94 percent of the citations in 174 students’ researched composition papers from 16 disparate U.S. colleges and universities are working only with sentences from the sources and are drawing those sentences from pages 1 or 2 of the source 69 percent of the time, we can conclude that these papers offer scant evidence that the students can comprehend and make use of complex written text. Maybe they can; but they don’t.

Our data raise the question of whether first-year students who are asked to write college-level researched papers have a full understanding of what that means. If they are told that their task is to make an argument and provide evidence supporting it from a number of sources, as Head and Eisenberg (2010) found many of our assignments require, then reading and engaging with those sources may seem counterproductive to the students. A reader who was sentence-mining this chapter might skip our methodology section entirely (indeed, in many disciplines this might be appropriate if the data are sufficiently clear); however, if that writer also skips the discussion, he or she might end up using our data as evidence for a claim that it cannot support.

Similarly, like several other authors in this collection (for example, see Purdy and Silva in Chapters 6 and 7, respectively), we do not present a thesis or finding until several pages into the chapter. A reader expecting a thesis on the first page might simply skip the entire chapter. Or, if challenged to summarize the argument in this chapter, an inexperienced reader of academic texts might report that we argue that writers “should be able to talk about the subject before [they] write about it” (a claim we quote from one of our sources on our first page). Another reader, having learned that we work on plagiarism, might search this document for terms such as “patchwriting” and use this article to provide a definition of that term or a statistic about its frequency, or maybe that reader would quote our recommendation that patchwriting be considered misuse of sources rather than plagiarism. Is any of that wrong? Not in the least. Would the reader have “digested” the broader argument? Not at all.
If writing instructors’ goal in assigning the research paper is to use it as a vehicle to teach information literacy skills, synthesis of ideas, or argumentation, we seem to be failing. Our data, we believe, reveal a problem that our pedagogy should address. These and other Citation Project findings suggest a compelling need to overhaul the teaching of researched writing in college classes; what we are doing right now is producing results that no one can celebrate.

We hope that our campus librarians and our faculty colleagues in writing programs and across the disciplines will take these findings as a mandate for instructional change. For example, we believe that we must offer instruction designed to bring students to a deep engagement with sources, of the sort that enables them to talk *with* and *about* a source rather than merely mine sentences from it. This involves walking students through texts and modeling for them the kind of engaged reading and rereading that we expect of them. It also involves teaching and assigning summary-writing and the process of building summaries into a text. As Head and Eisenberg (2010) recommend, it means providing careful instructions for the researched paper that focus on the purpose and method rather than the punishment for failure to correctly cite sources. This research has led us as teachers to replace the end-of-semester researched paper with shorter papers that are source-based, but that use fewer sources and require students to engage with their arguments and build them into a conversation. At the very least, we urge our colleagues to focus attention not on the ethics of plagiarism, but on source use as “a sign of good workmanship, part of the morality of writing” as Perrin (1959, 636) puts it.

**Endnotes**

1. While the two of us, as principal researchers, have shepherded the work described in this article, many able, dedicated compositionists have worked as our co-researchers and are listed at www.citationproject.net (2012).

2. “Patchwriting” stands between quotation and paraphrase; it is neither an exact copying nor a complete restatement, and scholars such as Howard (1992) and
Pecorari (2003) have argued that it typically results from an incomplete comprehension of the source.

3. Examples of this include research on student information literacy skills by members of the library sciences and second language studies communities, and research on source use (and misuse) by psychologists and anthropologists.

4. Linda Smith (1981) elegantly describes what this type of research accomplishes: “In general, a citation implies a relationship between a part or the whole of the cited document and a part or the whole of the citing document. Citation analysis is that area of bibliometrics which deals with the study of these relationships” (83). See also Howard White (2004).

5. We give special thanks to Drew University Professor of Statistics Sarah Abramowitz, who generously advised us in this process.

6. We wish to thank Drew University for two faculty research grants, the McGraw-Hill corporation for an additional research grant to support the coding of data, and Binghamton and Syracuse Universities for providing staff and material support.

7. Like Mary Ann Gillette and Carol Videon (1998), we found tracking down these sources to be a challenge. In some cases we had to go through 30 papers to get 10 whose sources we could locate. That process taught us a lot about how much students struggle to identify the components of sources gathered electronically: Who is the author? What is the title? Who is the publisher? These things are far from clear to the majority of students whose papers we source-searched. But not all of the problems with source retrieval were because the student was at fault. Some institutions make available to their students collections of sources in databases such as the Opposing Viewpoints Series, to which our coders did not have access. This aspect of source selection is another finding of this research that we will explore elsewhere.

8. We have made our methods and training materials available to help people understand our data. The reliability and validity of Citation Project data comes from a methodology developed over half a decade and from careful training and calibration of coders. We believe that citation analysis can be a valuable pedagogical tool, a very effective part of faculty development, and a useful component in course and program assessment as we discuss at the end of this chapter. We do not, though, invite people to use our methods and identify them as Citation Project research without our permission.

9. Statistical Package for the Social Sciences (SPSS)—renamed Predictive Analytical Software Statistics (PASW), but still generally referred to as SPSS—is a series of integrated computer programs that allow researchers to record and review data and produce various forms of statistical analysis and reports. Tables 5.3, 5.4, and 5.5 in this chapter were generated by SPSS using the data we entered. Although PASW (formerly SPSS) includes a mechanism to test for inter-coder reliability
and variation among coder’s decisions, we only entered final data once coding pairs had reconciled their coding sheets. For this reason we do not have PASW inter-coder reliability data. Because this research requires human judgment and interpretation, it is essential for coders to reach consensus on each individual citation. Where there were disagreements, one of the principle researchers joined the conversation to ensure consistency. The data for calibration papers coded by all coders therefore show 100 percent agreement rather than capturing the nuance of that conversation.

10. The Halo effect in empirical research, first described by Edward Thorndike in 1920 (25), occurs when one trait (in his case, physical attractiveness; in our case, effective writing) influences researchers’ assessment of other traits (in his case, character; in our case, use of sources). More recent studies confirm his finding and add that the effect “extends to alteration of judgments about attributes for which we generally assume we are capable of rendering independent assessments,” including in one example, students’ writing (Nisbett and Wilson 1977, 250, 251).

11. For those unfamiliar with SPSS output tables, figures listed under “Valid Percent” are the percentages excluding any missing data. If any citations had been counted but not coded, that count would have been recorded in “Frequency” along with a percentage under “Percent,” with the adjusted percentage of the five relevant traits appearing in “Valid Percent.” In this case, all incidences of source use were counted and coded as one of the five traits, so “Percent” and “Valid Percent” are the same.

12. See the Council of Writing Program Administrators’ Best Practices document for the differences between plagiarism and misuse of sources (www.wpacouncil.org/node/9). We agree that examples such as those presented in Table 5.2 should be defined as a misuse of source material, as should examples where the student omits to block or otherwise mark a cited quotation.

References


INFORMATION LITERACY SURVEY

Start of Block: Before You Get Started

What is your student ID number? *This is for administrative purposes and will be replaced by a random alphanumeric identifier once your information has been submitted.*

End of Block: Before You Get Started

Start of Block: Demographic Data

Q1 Age

Q2 Gender

Q3 Major (Program of Study)

Q4 Minor (if applicable)
Q5 Is English your home language?

- Yes
- No

Q6 Are you a (check one):

- First Year
- Sophomore
- Junior
- Senior
- Other (please Specify) __________________________________________________________

End of Block: Demographic Data

Start of Block: Research Education Background

Q7 In what course(s), if any, were you taught library and/or online research skills? (Check all that apply.)

- English course—high school
- Writing/Composition course—college
- College orientation
- Other (please specify): __________________________________________________________
- None
Skip To: End of Block If In what course(s), if any, were you taught library and/or online research skills? (Check all that... = None

Q8 If you were taught library and/or online research skills, how was instruction provided? (Check all that apply.)

☐ Lecture

☐ Hands-on workshop (In class or library)

☐ Assigned reading (textbook, handout, online tutorial)

☐ Other (please specify): __________________________________________

-------------------------------------------------------------------------------------------------------------
Q9 What were you taught about using sources?

☐ Citation practices (e.g., MLA, APA, etc.)

☐ Integrating information from sources into your own arguments

☐ Using quotations effectively

☐ Avoiding plagiarism

☐ Knowing when information from outside sources is needed

☐ Determining source types (e.g., an edited collection and a single author source)

☐ Evaluating print sources

☐ Evaluating sources from online library database

☐ Evaluating sources from websites

☐ Conducting interviews

☐ Composing effective surveys and/or questionnaires

☐ Determining the type of information needed

☐ Citing sources in the body of your paper

☐ Compiling a Works Cited list following MLA format
☐ Compiling a References or Bibliography list following APA format

☐ Compiling a source list following another style (please specify):

__________________________________________________________________________

☐ Using a bibliographic generator, such as EasyBib, or BibMe

☐ Citing sources, such as pictures, video, or audio

☐ Other (please specify):

__________________________________________________________________________
Q10  What research skills (if any) were you taught? (Check all that apply.)

☐ Keyword searching

☐ Subject/Author/Title searches

☐ Library catalog

☐ Using Boolean operators

☐ Online library databases

☐ Web search strategies

☐ Citation practices (e.g., MLA, APA, etc.)

☐ Note taking

☐ Summarizing information

☐ Paraphrasing information

☐ Interlibrary loan

☐ Conducting interviews

☐ Composing effective surveys and/or questionnaires

☐ Other  ________________________________________________
### Present Research Skills

**Q11 Please assess your ability**

<table>
<thead>
<tr>
<th></th>
<th>I am able to</th>
<th></th>
<th></th>
<th></th>
<th>I am not able to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locate books on a given topic in the university library</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>Locate articles in scholarly journals in print</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locate articles in scholarly journals online</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locate information on a topic online</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluate the reliability of online information sources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluate the reliability of print information sources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q12 Have you ever been required to include information from library and/or online research in a paper or project?

- Yes

- No

Q13 If you answered yes, what course or courses was it for?

________________________________________________________________

End of Block: Present Research Skills

Start of Block: Writing/research skills
Q14 Writing/research skills: Please indicate the extent to which you agree with the following statements using the scale below.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree (1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>Strongly Agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am NOT a good writer.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing will be important in my career.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My library research skills are NOT good enough for my needs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My online research skills are good enough for my needs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would like to improve my research skills.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have NOT been provided good enough instruction in library and/or online research skills.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have NOT been given basic instruction in copyright and fair use.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I often use a bibliography generator to automatically format my citations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Q15 Research Process: Please indicate the extent to which you agree with the following statements using the scale below.**

<table>
<thead>
<tr>
<th>Strongly Disagree (1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>Strongly Agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I do most of my research using online search engines, such as Google.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do most of my research using library databases and resources (including ProQuest, JStor, etc).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I often wait until the last minute to do research and write papers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I ask the reference librarians at my college library for help when I get stuck (either in person, or via email or chat services).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I maintain detailed records or notes as I research.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I sometimes forget where I got information.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Once I have located the required number of sources, I do not need to look for more.
Q16 Using information from sources: Please indicate the extent to which you agree with the following statements using the scale below.

<table>
<thead>
<tr>
<th>I know how to evaluate the quality of the information I find.</th>
<th>Strongly Disagree (1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>Strongly Agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I understand the importance of using and presenting information ethically.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I know how to cite information from sources.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I know how to summarize information from sources.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I know how to paraphrase information from sources.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I know how to use information from sources without plagiarizing.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I understand how to cite pictures, audio, and/or video.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q17 Kinds of sources: Please indicate the extent to which you agree with the following statements using a scale of 1 to 5, 1 being “Strongly Disagree” and 5 being “Strongly Agree.”

<table>
<thead>
<tr>
<th>Strongly Disagree (1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>Strongly Agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>If information is posted on a government Web site (.gov), it is trustworthy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If information is posted on a commercial Web site (.com), it is trustworthy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If information is posted on a news or newspaper Web site, it is trustworthy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If information is posted on an organizational Web site (.org), it is trustworthy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information posted by an educational institution (.edu) is trustworthy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
I use research to find information to support my opinions.

I use research to learn about a topic or answer a question.
RESEARCH-RELATED ASSIGNMENTS (USING QUALTRICS & CAMTASIA)

NOTE: All students in the courses taught by participating instructors will complete these assignments, which may be given to students at whatever point in the semester makes most sense for instructors. Wording, deadlines, and processes may be adapted as needed to fit the course but the survey and three videos will be saved locally and uploaded to a course Dropbox folder. Students who are willing to participate in the SATS Research Project will sign an informed consent form and then their work will be uploaded to a research Dropbox folder and anonymized.

1 - INFORMATION LITERACY ASSIGNMENT
This assignment has several steps that will be completed on different days

PART 1 - What you know about text-based research:
ASSIGNMENT: Complete the research survey on Qualtrics (this should take about 10 minutes [LINK]. Please answer all of the questions so your instructor is aware of aspects of the research process that should be covered in class).

PART 2 - What you do when you conduct text-based research:
ASSIGNMENT: Begin to research your topic using whatever library databases, online search engines, or other resources you normally use, and select five sources that you think might be useful for your project. Download or copy the source documents and make a list of the author, title, and where you found each one source. Bring the list to the next class session. Please record the first 20 minutes of your research using Camtasia.

METHOD:
- Download a free trial of Camtasia from https://www.techsmith.com/video-editor.html (see the document “Setting up and using Camtasia” and/or the PowerPoint of the same name)
- Record the first 20 minutes of your research using Camtasia. Record both what is on the screen and your comments about your research process (using headphones/ear buds). Tell us what you see on the screen, and describe what you are doing and why you are doing it. If you are looking for something and can’t find it or experience challenges with the database you are using, please say that. Similarly, tell us what you think of the sources you are finding and how they might be useful to you.
- At the end of 20 minutes, stop recording and save the video (an MP4 file) as a “Local File” on your computer as instructed (name the MP4 “[yourlastname]-research”).
- Please also upload a copy to the class Dropbox folder by [next class/date].

NOTE: Although you are only recording for 20 minutes, it will take more time to complete this assignment. You should allow at least an hour to find your sources.

PART 3 - What you think about your text-based research process:
ASSIGNMENT: View the Camtasia video of your research process saved on your computer and reflect on the research process revealed there, noting the strengths you observe and areas where you might benefit from additional instruction or advice. Please be thoughtful and honest so your instructor understands what you need to know about the research process and can help you learn it. Upload to the class Dropbox by [the end of class/next class]

METHOD:
- Using headphones, review the Camtasia video you made. As you watch and listen, list what you did in the order you did it, and make notes about anything you observe about your research process.
- Next, write a reflection with two parts:
  - First: imagine a reader who has not viewed the video, and provide a description of what you observed yourself doing and saying as you conducted your research;
  - Second: reflect on the video and what it reveals about your research process. Consider the reflection questions below to get you started (you do not have to answer them all, just think about them and answer whichever are relevant).
Reflection questions: What do you think someone else reviewing the video would say about your research process? Was your method very efficient (did you use your time well)? Was your process very effective (did you find good sources)? What seemed to work the best for you? Are there places in the video where you seem lost or confused? How did you deal with any frustrations you experienced? What does the video reveal about your research skills in general? What surprised you as you watched what you were doing and listened to your comments?

Finally: At the end of your reflection, offer a few sentences of advice for your future self that you can look at as you begin your next research project.

2 – THE WRITING PROCESS
This assignment has TWO part that will be completed on different days

PART 1 – DRAFTING

ASSIGNMENT: Once you have determined your argument and made an organizational plan for your first draft of the paper/project, review your sources again and then write a draft of your paper/project. Write at least one paragraph that incorporates at least one source. Please use Camtasia to record 20 minutes of your writing process as you work on that/those paragraph(s), and talk us through the decisions you are making about how to incorporate the source(s).

METHOD:
• Open your free trial of Camtasia and create a new recording (see “Setting up and using Camtasia.”)
• Use Camtasia to record 20 minutes of your writing as you draft material for your paper or project (at least one paragraph that uses at least one source). Please record both what is on the screen and your comments about your writing process (using headphones/ear buds). Tell us what you see on the screen, and describe what you are doing and why you are doing it. If you are happy with the way your work is going, please share that. If you are not completely sure how to incorporate the source or how to use it to support your argument, or if you struggle to understand the source, please tell us those things, too. If you like to revise as you write, talk us through the decisions you are making as you draft and revise.
• At the end of 20 minutes, stop recording and save the video (an MP4 file) as a “Local File” on your computer as instructed (name the MP4 “[yourlastname]-Draft”).
• Please also upload a copy to the class DropBox folder by [next class/date].

NOTE: Although you are only recording for 20 minutes, it will take more time to complete this assignment. You should allow at least an hour to write a first draft.

PART 2 - REVISI NG

ASSIGNMENT: Now you have received feedback on your draft, it is time to revise. Please use Camtasia to record yourself for 20 minutes as you revise at least one paragraph that uses source material.

METHOD:
• Open your free trial of Camtasia and create a new recording (see “Setting up and using Camtasia.”)
• Use Camtasia to record 20 minutes of your revision process, focusing on at least one paragraph that uses material from one or more sources (If possible, record yourself revising the paragraph you drafted when you recorded Part 1 of this assignment). As before, please record both what is on the screen and, using headphones/ear buds, also record yourself telling us what is on the screen and talking us through what you are doing and why you are doing it. Please also discuss anything you are uncertain about as well as what you feel is working in this revision.
• At the end of 20 minutes, stop recording and save the video (an MP4 file) as a “Local File” on your computer as instructed (name the MP4 “[yourlastname]-Revision”).
• Please also upload a copy to the class DropBox folder by [next class/date].

NOTE: Although you are only recording for 20 minutes, it will take more time to complete this assignment. You should allow at least an hour for this revision.
SYRACUSE UNIVERSITY
Institutional Review Board

APPLICATION FOR DESIGNATION AS RESEARCH EXEMPT FROM IRB REVIEW

Initial review generally requires 5-7 business days from the date an exempt application is received by the IRB Office. Should modifications and/or clarifications be requested by the IRB, additional review time may be required.

On average the IRB advises it may take 4 weeks for the IRB exempt review process. (This includes the investigators response time.)

*NOTE*: The Principal Investigator (PI) must be a person who holds a faculty appointment or other administrative position of Director or higher. If you have any questions regarding this IRB requirement call the IRB office at 315.443.3013 for guidance.

Principal Investigator/Faculty Member Information

<table>
<thead>
<tr>
<th>First Name: Rebecca</th>
<th>Middle Initial: M</th>
<th>Last Name: Howard</th>
</tr>
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<tbody>
<tr>
<td>Position: Professor</td>
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<td>Department: Writing Studies, Rhetoric, &amp; Composition</td>
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<td>College: A&amp;S</td>
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<td>Campus Address: 229 HBC</td>
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<tr>
<td>Campus Phone : 1091</td>
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<tr>
<td>Fax : 1220</td>
<td></td>
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<tr>
<td>Email: <a href="mailto:rehoward@syr.edu">rehoward@syr.edu</a></td>
<td></td>
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<tr>
<td>Cell Phone (optional): 315-439-2979</td>
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Student/Research Staff Information

<table>
<thead>
<tr>
<th>First Name: Jordan</th>
<th>Last Name: Canzonetta</th>
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<tr>
<td>☑ Graduate Student</td>
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<tr>
<td>Undergraduate Student</td>
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<td>Other:</td>
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<td>Fax:</td>
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<tr>
<td>Email: <a href="mailto:jncanzon@syr.edu">jncanzon@syr.edu</a></td>
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<tr>
<td>Cell Phone (optional): 330-891-9629</td>
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TITLE OF PROPOSAL: "Students and Their Sources: Undergraduate Information Literacy and Source Use"

NOTE: Collaborative Institutional Training Initiative (CITI) is not required for research determined to be exempt. CITI is required for researchers involved in expedited or full board studies.
1A. IS IT RESEARCH?

The definition of research as defined by the Department of Health and Human Services (DHHS) regulations: “Research means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge.” 45 CFR 46.102 (d)

To be considered a “systematic investigation”, the concept of a research project must:

- Attempt to answer research questions (in some research, this would be a hypothesis).
- Be methodologically driven, that is, it collects data or information in an organized and consistent way.
- Analyze data or information in some way, be it quantitative or qualitative data.
- Draw conclusions from the results.

A. Is your project a systematic investigation?  ☑ Yes  ☐ No

B. Provide an explanation for your response: This mixed-methods pilot study is designed to further educators' understanding of how undergraduate students in required or introductory composition courses choose and use research sources, and how they describe and explain that process. While other researchers have gathered data from isolated parts of the research process, no study has followed students from the beginning of the process to the end, collecting and coding artifacts of students' research processes and their interpretations of their research. This project draws on three existing and published studies (Appendices A, B, C), each of which researched isolated parts of the research process. Our research will be conducted in 10 sections of a Syracuse writing class, WRT 205/209. All students in these 10 sections will do the homework described below as part of the course, but their data will only be included in the research if they agree to participate. Instructors of the sections will not know which students are participating in the research. Researchers will not have access to data from non-participating students. We will follow the students' research process from the moment they first visit the library, when they will complete an anonymous survey using Qualtrics (Appendix F) and use Camtasia screen capture software to record their search process and simultaneous reflection on that process (Appendix E). These components of the study employ the RAP (research aloud protocol) developed by the multi-site LILAC Project research team (Appendix A). Once students begin to incorporate information from those sources into a research project, they will use our modification of the RAP protocol to capture their process as they draft a paragraph using one or more sources (Appendix E) and later as they revise the same paragraph following instructor feedback. At the end of the semester, participating students will be invited to take part in an interview outside of the class using questions developed by Olsen and Diemeka (Appendix F) and to submit their completed paper to the research team for analysis using citation context coding methods developed by the Citation Project (Appendix C and http://citationproject.net/about/research-methods). The combination of qualitative and quantitative data gathered from this research expand data already collected in previous studies, and they allow the research team to draw provisional conclusions about each stage of students' research processes.

“Generalizable knowledge” would include one or more of the following concepts:

- The knowledge contributes to a theoretical framework of an established body of knowledge.
- The primary beneficiaries of the research are other researchers, scholars and practitioners in the field of study.
- Publication, presentation or other distribution of the results is intended to inform the field of study.
- The results are expected to be generalized to a larger population beyond the site of data collection.
- The results are intended to be replicated in other settings.
- Web based publication for professional purposes.
C. Will your project contribute to generalizable knowledge? ☒ Yes ☐ No

D. Provide an explanation for your response: This research contributes to and expands the understanding of information literacy, source use, and intertextuality practices already developed in the fields of writing and information literacy studies. As noted, the methods and analysis replicate and slightly modify those of three existing and published studies (Appendices A, B, C), making this study of value to other researchers, teachers, and administrators involved with student research and plagiarism. The research team expects to publish the findings of this pilot study in academic journals, as well as making them available via the Citation Project website (citationproject.net). Researchers will modify the methods as necessary to allow expansion to other institutions and replication by other researchers. The findings from the pilot study may be generalized with regard to Syracuse University students and compared with the data from other studies to suggest broader conclusions and to generate hypotheses regarding the larger population; the expanded research will be generalizable to US undergraduates from a cross-section of backgrounds and institutions.

If “yes” to question A. AND C above the activity is considered research. Continue completing the application.

1B. IS IT HUMAN SUBJECTS RESEARCH?

A. Is the data that is being obtained about living individuals? ☒ Yes ☐ No

B. Are data collected through interaction or intervention with individuals (e.g., interviews, surveys, or any direct contact)? ☒ Yes ☐ No

C. Is identifiable individual private information being obtained (e.g., chart reviews, information from data or tissue repositories)? ☐ Yes ☒ No

D. Are data or specimens received by the investigator with identifiable private information? ☒ Yes ☐ No

E. Are the data/specimens coded with a link back to the individual? ☒ Yes ☐ No

If “yes” to question A. above AND “yes” to one or more questions from B-E in section 1B, the activity is considered human research. Continue completing the application.

Protocols that do not meet the criteria for research AND human subjects research need not be submitted to the IRB for review or for a determination that the project falls into an exempt category.

Additional guidance for publically available data:
Some research involves the analysis of data about humans for which the regulatory definition of “human subject” is not met. One example is research that involves only the analysis of de-identified data contained within publicly available datasets (available to any one regardless of occupation, purpose, or affiliation, and those individuals who are responsible for posting the dataset had legitimate access to the data and have employed the necessary mechanisms to ensure the privacy and confidentiality of the individuals about whom the data were collected).

While the activity described above meets the regulatory definition of research, the definition of human subject is not met because data about a living person is not obtained through interaction or intervention, and no private, identifiable information about a living individual is obtained.
2. CATEGORIES FOR EXEMPTION

I/We certify that the above research project involves human subjects only in one or more of the following categories, and will be carried out using standard methods. Please check the number next to category(ies) pertinent to the research.1

☒ 1. Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as:
   (a) research on regular and special education instructional strategies, or
   (b) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods, and
   (c) the research must not involve prisoners as participants

☒ 2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior unless:
   (a) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and
   (b) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.
   (c) If the research involves children, the procedures must be limited to educational tests and observation of public behavior where the investigators do not participate in the activities being observed.
   (d) The research must not involve prisoners as participants.

☐ 3. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (2) of this section, if:
   (a) the human subjects are elected or appointed public officials or candidates for public office; or
   (b) federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.
   (c) The research must not involve prisoners as participants.

☐ 4. Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. [Note: To qualify for this exemption ALL of the data, documents, records, or specimens must be in existence before the project begins.]
   (a) The research must not involve prisoners as participants.

☐ 5. Research and demonstration projects which are conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine:
   (a) public benefit or service programs;
   (b) procedures of obtaining benefits or services under those programs;
   (c) possible changes in or alternatives to those programs or procedures; or
   (d) possible changes in methods or levels of payment for benefits or services under those programs.
   (e) The protocol must be conducted pursuant to specific federal statutory authority.
   (f) The protocol must have no statutory requirements for IRB review.
   (g) The protocol must not involve significant physical invasions or intrusions upon the privacy interests of the participants.
   (h) The protocol must have authorization or concurrence by the funding agency.
   (i) The research must not involve prisoners as participants.

1 The Federal Regulations also include a sixth category for exempt research, the Institutional Review Board has the discretion to determine what categories to recognize and does not recognize research under category 6 as qualifying for exemption. If you have questions, please contact the IRB at 315.443.3013 or orip@syr.edu.

6. Taste and food quality evaluation and consumer acceptance studies a) if wholesome foods without additives are consumed or (b) if food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe by the Food and Drug Administration or approved by the Environment Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.
3. SCREENING QUESTIONS

A. Does any part of the research require that subjects be deceived? □ Yes □ No
B. Will research expose human subjects to discomfort or harassment beyond levels encountered in daily life? □ Yes □ No
C. Could disclosure of the subjects’ responses outside the research reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects’ financial standing, employability, or reputation? □ Yes □ No
D. Will individuals involuntarily confined or detained in penal institutions be subjects of the study? □ Yes □ No
E. For research proposed under category 2, will research involve surveys, interview procedures, or observation of public behavior with children where the researcher will interact with the children? □ Yes □ No
F. For research proposed under category 4, will any of the data, documents, records, pathological specimens, or diagnostic specimens be collected or come into existence after the date you apply for exemption? □ Yes □ No
G. For research proposed under category 4, will any of the information obtained from data, documents, records, pathological specimens, or diagnostic specimens that come from private sources be recorded by the investigator in such a manner that subjects can be identified directly or through identifiers linked to the subjects? □ Yes □ No

If you checked YES to ANY of the questions above, your research is NOT EXEMPT. Do not complete this application. Submit an Application for Expedited or Full Board Review.

If you have checked NO to ALL of the questions above, your research may be exempt. Please complete the remainder of the exempt application.

4. RATIONALE FOR EXEMPTION

Please briefly describe the proposed research and explain in clear language why you believe this research should be exempted from IRB review.

The study is informed by prior research into how students select and use sources in academic writing and how they perceive that process (Head & Eisenberg 2012, 2014; Jamieson & Howard 2013; Walker, Bohannon, & Li 2016, 2017; Olsen & Diekema 2018). Each of these studied a different group of students. While replicating selected aspects of earlier research, our proposed research differs from its predecessors in its multimodality, combining the methods and analysis of the three previous studies to a single university writing course (WRT 205/209) through the process of researching, selecting sources, drafting, and revising a researched project assigned in the class. Researchers will collect both artifacts (screen captures of the research process, drafting, and revising; and sample paragraphs) and student reflections and explanations of their process (survey; research/write-aloud-protocols [RAPS]; and interview). Combining the qualitative and quantitative data from these various parts of this study will produce an in-depth picture of student researched writing, allowing us to generalize about the population under scrutiny and develop replicable methods. Participation will be optional, and instructors will not know which of their students are participating. Each part of the project will be assigned a unique identifier, allowing researchers to study artifacts from individual students, but the identity of those students will remain anonymous. The goal of the study is to gain deeper understanding of student writing and information literacy processes so that instructors can develop more effective pedagogies. It can in no way harm participants directly or indirectly; hence our request for exemption under the guidelines in this document.
5. RECRUITMENT

Please submit all recruitment materials including but not limited to: recruitment flyers, e-mails, letters and/or scripts.

Describe plans for recruitment and how contact will be made:
Experienced instructors of WRT 205/209 will be invited to volunteer to be participating researchers via email (Appendix G) and, if they express interest, through followup conversation. Those instructors who agree to participate will be provided with assignments that each participating section of the course will follow (Appendix E). All students in the sections taught by participating instructors will complete all parts of this process aside from the final interview, but only those students who agree to participate in the research will share their work with the research team and participate in a final interview. Those whose work is to be coded will be randomly selected from the participant pool to generate the same amount of data from each section.

A statement in the syllabus will alert students to this research project (Appendix H), and a member of the research team will visit each participating section, explain the research, and invite students to participate and sign informed consent forms (Appendix I). The instructor will not be present for this process so will not know who has agreed to participate. All participants will be entered into a prize drawing once they submit their materials, and may win one of several pre-identified prizes. Participants will not be paid nor receive additional credit for participation and instructors will not know who is participating. Those agreeing to participate will receive instructions for sharing their work with the research team. At any point in the study they may withdraw.

Will you be contacting participants through a contact list or list server provided by a department, organization, company or school? If yes, provide a letter of support from the individual authorized to provide you with this information. More than one letter may be required.

☐ Does not apply
☐ Letter(s) attached
Comments:

Will you require support from the University for selection or contact information of participants? If the answer is yes, you will be required to obtain a letter of cooperation from the Office of Institutional Research and Assessment (OIRA).

☐ Does not apply
☐ Letter attached

Will this research be conducted in a school or is it funded by the US Department of Education?

☐ No. (Skip to Section 6)
☐ Yes. If yes, complete the form found at: http://researchintegrity.syr.edu/wp-content/uploads/2016/10/Department-of-Education-Schools-Form.doc

6. METHODS

All research measures which will be used during this study including sample questions, questionnaires, recruitment scripts, etc. must be included with the application.

Provide a detailed description of what participants will be required to do.

Participants will be asked to share artifacts that they have produced as part of the normal operation of the course. All students in the class will complete the same tasks; those participating in the study will submit them to the research team. Students will be asked to do the following:
1) Complete a 10-minute survey of their research knowledge using Qualtrics (Appendix D)
2) Install Camtasia screen capture and voice-over software on whatever device they use for research (laptop, iPad, or smart device) (Appendix J)
3) Use Camtasia to record 20 minutes of preliminary research for a class assignment using the Syracuse library database or search engines of their choice. Camtasia will record the screen as they conduct their research and their voice talking researchers through the process (Appendix J)
4) Use Camtasia to record 20 minutes of preliminary drafting for their research project. Students will be asked to begin recording as they start incorporating ideas and information from a source and to record themselves writing and talking about their process (Appendix J)
5) Use Camtasia to record 20 minutes of revision of the material drafted in (4). Students will be asked to begin recording as they start revising and to record themselves writing and talking about their process (Appendix J)
6) Students participating in the research will be asked to submit their final research project to the team at the same time as they submit it to the course instructor along with items 1-5.
7) Students participating in the research will be invited to participate in an optional 30-minute interview about their writing and research processes at the end of the semester (Appendix F)

Will this research be conducted by SU investigators in foreign countries?

☐ No.
☐ Yes. If yes, an additional form related to international research must be completed and submitted with this application: International Research Appendix.

7. INFORMED CONSENT REQUIREMENT
   (This is not required for Category 4)

Please provide a copy of the written or electronic informed consent document or oral consent script you will use in your study. Please note this document must include the following minimum required elements:
   1. A statement that clearly explains that the study is research. The purpose of the research should be described in lay language, avoiding the use of technical terms and using language appropriate to the targeted subject group.
   2. A statement that describes what procedures will be followed, clearly explaining what participation in the study will involve.
   3. It must be clear that participation is voluntary and participants can withdraw from the study at any time without penalty.
   4. Contact information for the investigator.
   5. For adult participants, a statement that the subject is 18 years or older must appear as part of the consent.
   6. For internet research add the following statement:
      Whenever one works with email or the internet there is always the risk of compromising privacy, confidentiality, and/or anonymity. Your confidentiality will be maintained to the degree permitted by the technology being used. It is important for you to understand that no guarantees can be made regarding the interception of data sent via the internet by third parties.

8. SIGNATURES

This is to acknowledge that I take full responsibility for the conduct of the research. Investigators of studies exempt from IRB review are responsible for the ethical conduct of research and obtaining informed consent when appropriate. (If this study is being conducted by a student, a faculty member must sign in the space provided). Electronic and /or faxed signatures are acceptable.
Signed: ______________________________ Date: __________________________
(Faculty member)

Name (printed): ______

Signed: ______________________________ Date: __________________________
(Student, if applicable)

Name (printed): ______

Graduate ☒ Undergraduate ☐

All notifications will be sent via email. Hard copies will be only be provided upon request.

RETURN ONE COPY OF THE COMPLETED APPLICATION TO:

SYRACUSE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
Office of Research Integrity and Protections
214 Lyman Hall
Syracuse, New York, 13244-1200
Phone: 443-3013
orip@syr.edu
Participating students randomly selected for the final interview will be asked the questions developed by researchers Whitney M. Olsen and Anne R. Diekema, with clarification questions as necessary. Interviews will follow the protocol described by Olsen and Diekema in “Asking the Right Questions: Using Interviews to Explore Information-Seeking Behavior.” Points of Departure, ed. Tricia Serviss and Sandra Jamieson. Utah State UP, 2018. In press.

**Final Interview questions**

1. The first thing I want you to share is a story. Think about research papers, that is, the essays where you have to incorporate outside sources. Think about ones you have written for your college-level English courses. If it helps, think about the next essay you have to write, too. Tell me the story of what happens from the time you get the research paper assignment to the time you turn it in. As necessary during the story, inquire about where information/research/sources came from.

2. When you do research for your English papers, do you go in search of something specific, or do you tend to browse until you find something? Can you try and describe what your search process is like from beginning, when you start looking for information, to end, when you have everything you need?

3. Generally speaking, where else do you go in terms of gathering research or sources for your English papers, thinking about both people and places?
   List sources here:
   a. Are there any other places you go for information? For instance, digital libraries, databases, library websites, news sites, Wikipedia, or other websites, for example?
   b. I’m not familiar with __________ (information place). Can you describe it briefly for me?

4. Why do you use ______ (source) for your writing research? (What is it about those information places that you find useful? What is special about them?) Go through each source student mentioned, asking why student uses each source.

5. How did you find out about these sources of information? (Were you taught how to use them? Did you hear about them from friends or roommates? Forums? Study guides? Just happen upon them?) Go through each of the sources the student volunteers to learn how s/he found out about them.

6. When you come across a potential source for your paper, how do you know if a source is useful or not? How do you know if a source is credible?

7. When you choose a source for your paper, what makes you decide to keep it or move on without using it?

8. How far into a source do you read before choosing something to include in your paper? Is it different for short sources and very long sources?

9. During the search process, do you tend to prefer primary sources or secondary sources? To clarify, primary sources are the first reports on data or original documents, and secondary sources tend to interpret, analyze,
summarize, or paraphrase the original information. A medical study from Princeton would be the primary source, where WebMD, Wikipedia, and news articles would be the secondary sources.

a. Why do you prefer primary/secondary sources? What is it about them that is helpful to you when you research and when you write?

10. When you add the source to your writing, how do you typically do it? Do you quote it, summarize it, paraphrase it, reword it? (Whichever one(s) the participant chooses, ask them how they define that: How do you define summarizing?)

If they mention summarizing or paraphrasing, ask: When you summarize or paraphrase, do you keep some of the sentence structure of the original, do you move things around and change it completely, or what does that look like when you do it?

    a. (Ask why they do it that way, if it’s not built into their answer.)

11. Is there anything else about the information you use as a writing student that would be helpful for people to understand?
Dear __________,

We are writing to invite you to become a participant researcher in a semester-long pilot study as part of the Citation Project, led by Dr. Rebecca Moore Howard (Syracuse University) and Dr. Sandra Jamieson (Drew University).

This study, provisionally entitled “Students and Their Sources,” uses a combination of surveys, interviews, and screen-captured Research Aloud Protocols (RAP) to explore students’ research and writing practices. Working with a sample of WRT 205 sections, this study aims to provide a picture of the student research process from the selection of sources to the revision of source-based text. The goal of this study is to understand how and why undergraduate students in required or introductory composition courses choose and use sources in their research. As a participant researcher, you will have the opportunity to use the data collected in your own teaching, research, and writing.

Your participation in this study will involve you asking all of your students to complete one 10-minute Qualtrics survey and three 20-minute screen capture recordings as they work on their research and writing and upload them to a Dropbox folder that we will set up for your class. These recordings can be made at whatever point in the semester fits into your syllabus and assignment sequence, and they can be used to foster class discussions, revision, and reflection. You and your students will also be able to review their survey responses and screen recordings to identify areas where they need additional instruction or support. Students will be asked to download a trial version of Camtasia (screen capture/voice over software) and members of the research team will be available to assist you in class as you introduce this software if you wish. We will also provide optional materials and activities that you may integrate into your course plan.

Toward the end of the semester, a member of the research team would visit your class for about 10 minutes to explain the research and invite students to participate. Those who consent will be asked to share the survey and three screen-captures along with the final source-based project (all of which will be anonymized once they have been submitted). They will also be asked to consent to being interviewed on their research and writing process if they are randomly selected.

For similar examples of the work we will be doing in this project, see the Citation Project or the Lilac Project.

Thank you for your time and consideration.

Best regards,
Voluntary participation in research on student research and writing

As a student in this class, you will be asked to complete a 10-minute survey about your research skills and use video recording software to record your writing and research process. We will use these materials in class to discuss and improve your research and writing skills. At the end of the semester, you will have the option to participate in the Citation Project’s national research on source-based college writing. You can participate in this research project by signing a consent form and sharing work you produced for this class. At the end of the semester, participating students will have the option of being interviewed about their research and writing processes. All identification will be removed from work submitted to this research project, so it cannot be traced back to you. As the instructor of this course, I will not know who is or is not participating in the Citation Project research. Your choice of whether to participate in the research will have no effect, positive or negative, on your grade in this course.
Participant Consent Form

As a student in WRT 205/209, you are invited to participate in a research study entitled “Students and Their Sources.” The purpose of the research is to learn about undergraduates’ research and writing practices. The results of the research will be published so that it can help teachers design effective research instruction for undergraduate writers.

Your involvement in this study is voluntary. You can choose whether you wish to participate. If you decide to participate, you may withdraw from the study at any time without penalty. Your WRT 205/209 teacher will not know whether you are participating in the study. Your decision about participating will have no effect on your grade in WRT 205/209.

If you choose to participate in this study, you will be asked to share with the Citation Project researchers the Qualtrics survey; three Camtasia recordings; your final paper or project; and the reflection on your research process. All of these are part of your regular work in WRT 205/209 and require no extra work from you.

Randomly selected research participants will be invited to participate in a short optional interview, which will take approximately half an hour of your time. Participants’ names will be entered into a drawing for one of a number of possible prizes.

Materials you submit to the research team will be uploaded to a secure server, where they will be anonymized and assigned an alphanumeric identifier prior to analysis. They will not be traceable back to you. Whenever one works with email or the internet, there is always the risk of compromising privacy, confidentiality, and/or anonymity. Your confidentiality will be maintained to the degree permitted by the technology being used. It is important for you to understand that no guarantees can be made regarding the interception of data sent via the internet by third parties.

If you have any questions, concerns, or complaints about the research, please contact Professor Rebecca Moore Howard at rehoward@syr.edu.

I am 18 years of age or older, and I agree to participate in this research study.

Printed Name of Participant

Participant Signature

Date

Printed Name of Researcher

Researcher Signature

Date
Camtasia is a software program that will simultaneously record your voice and what is on your computer screen. For the next three assignments, you need to download Camtasia to your laptop and set up a 30-day trial. We will ask you to use it at selected moments during your research and writing process as you work on your next assignment (note: Camtasia does not continue to record once you exit the program.)

You will need use earbuds with a microphone or simply the microphone on your computer. You will not be asked to use a camera or video recording of yourself.

Please go to https://www.techsmith.com/video-editor.html

- Select Camtasia “Free Trial”
- Download the Camtasia 3 software.
- An activation email will be sent to whatever email address you enter; check email and verify your free trial in the email from Camtasia
- When you are ready to begin your research activate the account by clicking on “Free Trial.”

You can watch the video on the site to learn more, but all we are asking you to do is record and save.

- Open Camtasia 3.
- It may open with a large black editing screen like this:
  If so, click on the little red “RECORD” button at the top left-hand side of the screen.
- This will take you will see the Camtasia control panel

WINDOWS CONTROL PANEL

- Select “Full Screen” [1]
- Make sure “Audio” is ON [2] (it is off in this image)
- Camera can stay off, you will not be using it
- When you are ready to start recording, click “rec”

MAC CONTROL PANEL

- Select “Color LCD” [the first block]
- Select “Built in Microphone” (check your computer volume is on – if it is, you’ll see a number on the dial (in this case 45)
- When you are ready to start, click “start recording”

Begin your assignment. Open your internet browser for the research assignment or your word processing program for assignments 2 and 3. Complete the assignment (recording what is on your screen and using headphones/ear buds to talk us through the process as if we could not see what you are doing).

AFTER 20 MINUTES, PLEASE STOP RECORDING

WINDOWS

- Click the Camtasia icon in the taskbar, then click “stop”
- OR - Pres F10 to stop recording [F9 to pause/resume]

MAC

- Click the Camtasia icon in the Apple menu bar, then click “Stop Recording”
- OR - Pres “CMD+OPTION+2” to stop recording [CMD+SHIFT+2 to pause/resume]
ONCE YOU HAVE COMPLETED THE RECORDINGS, you will be returned to the edit screen.
You do not need to edit your recording.
Simply save it and submit (you can use this free trial to make and edit other videos of course)

This is the editing window
(it looks a little different in MAC and WINDOWS, but in each case you will see a green “SAHRE” option in the top right hand corner).

Click on the green “Share” button.

To SAVE on your computer using WINDOWS or MAC

• Click on the green “Share” button at the top of the editing window
• In the drop down menu, select “Local File.”

• This will send you to a screen encouraging you to buy the software. Under “Trial Version” select “Produce with Watermark.”

• In the new dialogue box that prompts you to name the file, please use your last name + the assignment (e.g.: Jamieson-research]
• Select a location ON YOUR OWN COMPUTER, and click on “EXPORT” (the file will be an MP4)

Once you have saved your own copy, please also upload the file to the class Dropbox folder as explained by your professor.