

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,

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 across 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 “struggl[ing] 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 IRB¹ 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 video² 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.³ 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 mismatches 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 quantitative data captured by the Qualtrics surveys.

FINDINGS

The pilot study included fifteen subjects ranging from first-year undergraduates 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 subjects) 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 subjects' information-literacy education and skills. With reference to general 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 training 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 instruction 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 majority 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

Table 2.1. LILAC Project pilot participant academic demographics⁴

<i>Name</i>	<i>Year of Study</i>	<i>Major</i>	<i>Minor</i>
Sharon	Master's	Public Administration	N/A
Maria	Freshman	Psychology	N/A
Trevor	Senior	Writing and Linguistics	Journalism
Robert	Freshman	Economics/Finance	Music
Frank	Freshman	Journalism	N/A
Paul	Freshman	History/Political Science	Economics
Jennifer	Freshman	Multimedia Communication	N/A
Laura	Freshman	Sports Management	Business
Michael	Freshman	Computer Science	N/A
Heather	Freshman	Music Education	N/A

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

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 C3lon-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 (C3lon-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 C3lon-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 harken 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 life-long 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 ablackwellst@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/or 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!

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