



Using Visual Prompts in Research

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INTRODUCTION

Hearing from college students about their experiences as they move through campus and other locations completing their academic tasks can provide a wealth of information about their use of spaces and scholarly habits, as well as insights into the student experience that can inform library services, resources, and space planning. While we observe students using library and campus space throughout our days—using computers or printing in the library, in our information literacy classrooms, or hanging out in campus lounge areas—we do not always know how these activities fit into the rest of their days, what they are doing when not in these places, or their thoughts and feelings as they do their schoolwork. Recruiting students to visually record their activities, often as a precursor to interviewing them, can elicit remarkable details that can illuminate students’ academic practice.

In library and information science (LIS) research in academic libraries, qualitative approaches have been increasingly used in recent studies to explore “the details and logic behind decisions that are only partially revealed by the relatively limited, prescriptive questions asked by large-scale surveys.”¹ Qualitative research methods, which often include observation and open-ended interviews with participants, seek to uncover the attitudes, beliefs, and emotions people have in relation to their activities and relationships. Ethnography is a qualitative approach to studying culture that aims to explore participants’ experiences and points of view. Ethnographic methods, including observation and interviews, allow researchers to learn not just *what* people are doing, but *why* they choose to do it in that way and *how* they make sense of their experience; in LIS research this is sometimes framed as finding out what students are “really doing” in the library. By working with our students as participants, who contribute to understanding rather than merely consent to be observed, we can begin to uncover the complexity of lived experience, “getting to the feel and not just the structure or organization of life.”²

The semi-structured interview is an ethnographic method in which the researcher guides the direction of the interview through prompts, in the form of questions, and follow-up questions that serve as additional probes. The use of prompts and probes facilitates flexibility in the direction of an interview and allows participants to introduce additional information and details beyond the scope of each question. A compelling way to elicit open-ended responses from participants during semi-structured interviews is to ask participants to generate visual artifacts such as photographs, maps, drawings, and diaries as an entrée to exploring their daily activities, processes, attitudes, and understandings. While useful as ice-breakers for interviews, more importantly, participant-generated visual prompts can enhance self-reflection while allowing participants to *show what is important to them*, not just what we as researchers think to ask. The visual artifacts generated with these methods can often reveal meaning that question-only interviews might miss as well as otherwise invisible practices and beliefs that are obscured in surveys and even open-ended interviews without visual prompts. This practice of making the familiar strange is particularly important for researchers engaged in studying our own domain, as is the case when librarians study library use; participant-generated visual prompts can help overcome researcher preconceptions about the how and why of library user behavior.

OUR PROJECTS AND RESEARCH DESIGN

We are faculty librarians at the City University of New York (CUNY), and we both have graduate training in anthropology. We have brought these perspectives together in our research and for over a decade have been engaged in examining CUNY students' scholarly habits. As librarians, we see and work with students every day in our libraries, classrooms, and on campus. As researchers, we have sought to learn about where and how students get their schoolwork done when we cannot see them. Why do they choose to work in the library, at home, or elsewhere? What tools and technologies do they use or need? What “makes it all work” for them, and what might be keeping away students who are not in the library? How can what we learn inform improvements in library services for all students?

With this research, we aim to contribute to the understanding of the student experience at public, commuter universities that enroll primarily non-traditional students—students who make up the majority of those in higher education in the US though they are not as well represented in the popular media as residential students. CUNY is the largest urban public university in the United States, with more than 270,000 undergraduate and graduate students at twenty-five campuses in New York City. Reflecting the city it serves, CUNY is an exceptionally diverse institution: in fall 2017, 32.3 percent of undergraduates self-identified their race/ethnicity as Hispanic, 25.6 percent as Black, 21.1 percent as Asian, 20.7 percent as White, and 0.3 percent as American Indian/Alaska Native. Just over a quarter of CUNY students are older than twenty-five, and 26.5 percent work at a job for more than twenty hours per week in addition to their studies. Nearly 45 percent of CUNY students are in the first generation in their families to attend college, and 42.2 percent reside in households with annual incomes under \$20,000.³

Our research into the CUNY student experience has progressed through several phases. In 2009–2011, we used a variety of visual prompts for semi-structured interviews with students at six CUNY colleges to learn more about how, where, when, and with what tools CUNY students do their academic work. In 2015–2016, we completed another round of research at three CUNY colleges, including one using visual prompts and another with faculty and student questionnaires specifically aimed at updating our knowledge of how CUNY students use technology in their coursework. All of our research protocols (i.e., the methods and approaches we used)—including prompts and semi-structured interview questions—are available on our project website for adaptation and use.⁴ We have published and presented on the results of this research, also available on our project website. The visual prompts we have used include mapping diaries, SMS mapping, photo surveys, research process drawings, and cognitive maps, which we will discuss in more detail here along with several visual prompts used by other researchers.

Visual Prompts for Semi-Structured Interviews

In using each of these methods, we followed a similar process to gather data, as, for example, during our research protocol for the mapping diaries interviews used during our 2009–2011 research. After obtaining approval from the CUNY Institutional Review Board, we recruited students for mapping diaries interviews by posting fliers around each campus but not in the library, with instructions for enrolling in the study. Students contacted us via email, and we arranged a meeting with them at their campus to review and complete the consent form and to receive instructions for the study. Mapping diary participants were instructed to choose one typical school day within two weeks from our initial meeting to log and draw their activities from the time they woke up in the morning until they went to sleep in the evening. After students completed their mapping diary, they emailed us to arrange for their interview. During each interview, we began by looking at their log and drawings together as we asked students to talk us through their day; as each student described their day, we asked for clarification, if needed; for example, we might ask what they did during their commute on the subway. After reviewing their day, we asked students a small number of follow-up questions to learn more about how that day differed from other days during a typical week, what (if anything) they found most frustrating during that day, and what they considered to be the best part of that day. The structure provided by reviewing students' visual artifacts and using a small number of pre-determined questions provided us with comparable information from each of the students we interviewed, while the flexibility offered by using the semi-structured interview format allowed for unique details about each students' experience to emerge. Below we discuss a number of visual prompts that can be used similarly as the foundation of semi-structured interviews.

Mapping

Mapping prompts, sometimes called mapping diaries, ask participants to record and discuss their activities over a discrete time period in a manner that can yield a visual map.⁵ Instructions provide students with general direction about what to record about their activities (location, context, etc.), the manner of recording, and the time frame,

while allowing each participant to make choices about what and how to represent these activities. Once an initial map is generated, additional information and insights are elicited during a follow-up interview with the researcher in which the map serves as the focus of discussion. Mapping diaries can provide a rich source of information on students' activities both on and off campus. They can be an especially useful research method for learning more about students who commute rather than live in dormitories, who spend less time on campus than do residential students.

One influential example of a mapping protocol for LIS research was used at the University of Rochester as part of a study that sought "to understand how [students] fit their paper-writing activities into the overall flow of their lives, as they move from place to place and activity to activity, throughout the campus and throughout the day."⁶ Researchers gave students a map of their campus and surrounding areas and asked them to record the time and activity for everything they did over one typical school day. In the follow-up interviews, researchers learned about the range of activities that students are engaged in, both academic and non-academic, as well as a small yet important detail of students' days: that even if a student owned a laptop computer, they often did not bring it with them as they moved around campus.⁷

In our own research a few years later, we adapted the Rochester protocol, giving our urban commuter students New York City subway maps as well as campus maps. In contrast to the Rochester experience, we found that when CUNY students traced their routes, the resulting maps did not illuminate much about their days due to differences in the physical layout of both our campuses and cities. CUNY campuses are compact, urban, and vertical so students might spend an entire day on campus yet stay within a single building; the subway maps on which students traced their routes lacked detail about their long commutes and their home, campus, or work neighborhoods. At the suggestion of our colleague, Alycia Sellie, we asked students to draw their own maps in subsequent research. Students' hand-drawn maps of their days produced a meaningful visual accompaniment to their time log and the details they chose to include or exclude—a bowl of spaghetti prepared for dinner while studying at home (we do not allow food in our libraries), a cartoon bubble full of Zs to indicate falling asleep in class—added depth to our exploration of students' academic activities.⁸

Maps can be generated in other ways as well. In a subsequent iteration of our research, we partnered with colleagues at six other academic libraries to use text (SMS) messaging to create maps of students' days.⁹ Our colleague Andrew Asher of Indiana University implemented a survey in the Qualtrics platform that messaged students in ninety-minute intervals throughout one day, asking them to share their location, activity, and how they felt at that moment. Once data collection was finished, we were able to geocode the students' locations in order to create a map of each student's day using Google Maps. As with the hand-drawn mapping diaries, we also held a short interview with each student to clarify and elaborate on any details missed in their text message responses. This SMS mapping method also enabled us to compare students' activities and the distance traveled during a typical school day between all eight participating colleges and universities. We gained insights into how students in dissimilar locations and learning environments with

disparate commuting practices shared fundamental desires (and methods!) to recoup commute time for schoolwork.

Photo-Elicitation

In photo-elicitation research, photographs of locations, activities, objects, or even themes are generated by participants and used as discussion prompts for interviews. Because participants use cameras to take photographs themselves, allowing the researcher to literally see what the participant sees, they can provide unexpected glimpses of everyday experiences often taken for granted. Photography can be a great way to capture details about how space, technology (including digital literacies and practices), and other objects are being used, especially outside the library or off-campus. Photographs also produce compelling visual evidence for stakeholders or to illustrate reports, presentations, and publications. We note that photo-elicitation has become easier to implement in recent years as virtually every student now has a smartphone they can use to take the photographs, rather than the more involved process of handing out disposable cameras and getting film developed that was common procedure a decade ago. Here we discuss a photo-elicitation method often called photo surveys or photo diaries.

Photo surveys have been used in several studies to explore a range of research questions about how students use library resources and services. At MIT, researchers included photography as part of a study in which they asked students “to record their academic information-seeking activities over seven days, including their use of the Internet, consulting books, discussing strategies with classmates, or meeting with faculty.”¹⁰ After a week of recording their activities, students were interviewed by the researchers while reviewing the photographs. The results from this research guided “priorities and plans for improving the MIT Libraries’ online systems for search and discovery of information resources.”¹¹

Many studies have used photo surveys to explore the places where and tools with which students do their academic work. Researchers at the University of Rochester gave residential students a list of photo prompts, including many that directly related to academic work—for example, “a place at school where you study” as well as some that encompass a wider range of students’ situations—for example, “your communication devices” (2007, 2011).¹² The Ethnographic Research in Illinois Academic Libraries (ERIAL) Project study also used photo prompts in this way to collect data across five colleges and universities in Illinois, illuminating similarities and differences in the student experience at these heterogeneous institutions.¹³ We have used similar questions at six CUNY colleges and gained insight into how critically important the kinds of private, quiet spaces our libraries provide can be for our city-dwelling students.¹⁴ In each study, researchers learned much about features of students’ preferred study spaces—including levels of privacy, light, noise, and comfort—that have directly impacted policies and plans in our libraries.

At California State University, Fresno, researchers incorporated photo prompts into their mapping diaries and asked students to log and photograph their activities over the course of one school day.¹⁵ These two methods are complementary; like mapping diaries, photo surveys can be especially illuminating when studying commuter students, who spend much less time on campus than do their residential counterparts. Bedi and Webb

asked students in two Canadian academic library studies to “photographically document” their own library activities to explore student wayfinding in the library with the goal of improving signage.¹⁶ In an imaginative extension of this research, the University of Victoria planned a co-curated exhibit of student photographs from the study.

While the specific local results of these studies vary, in all cases, the photos were the basis of more in-depth conversation during subsequent interviews with participants. As well, the photographic evidence students provide powerfully underscores the student experience: what is positive (study spaces near natural light!) or confusing about using the library, the value of the spaces our libraries provide, and what may be keeping students away from the library.

Drawing

Drawing is another visual research method that can be used to elicit creative representations of participant experience that can serve as the basis of an interview. Participants are asked to create a visual representation of a process, activity, or theme using pen and paper, either during the interview itself or before the interview occurs. While in our experience it is occasionally challenging to convince participants to draw during an interview, assurances that artistic skill level is not the focus of the study can usually convince the reluctant. This method produces both visual and interview data that can contain an astonishing level of detail that may not emerge in or be easy to represent in photographs. In particular, the ways that participants choose to represent elements of the process, activity, or theme in their drawing can reflect the importance they assign to each part of the process. Here we discuss two methods that use drawing: research process drawings and cognitive maps.

Research Process Drawings

Several LIS studies have used retrospective research process drawings and interviews to learn more about how students approach and accomplish a research assignment.¹⁷ Students are interviewed individually during which they are asked to describe in detail how they completed a research assignment from start to finish and to draw or sketch the process while describing it, a method known as research process drawing. We have also used this method in our research and found that the resulting interview and drawings reveal much about students’ successes and challenges in their work on research papers, presentations, and other research-based assignments.¹⁸ Students have illustrated their difficulties with finding a topic for their assignment, represented both the hard work and the positive benefits of assignment scaffolding for keeping them on track during a semester-length research project, and emphasized the relief they felt when their assignment was finally completed.¹⁹

Research process drawings can also be used in a classroom setting as both LIS research and as part of information literacy instruction informed by research. Beisler and Medaille worked with classroom instructors in a range of courses that required a research paper to ask students to draw their retrospective research process during classroom time, then contacted students for follow-up interviews.²⁰ They learned that “students recognize the

challenges they face in doing research but that they rarely take advantage of available support services.²¹ In another classroom-based application, Georgas, Regalado, and Burgess asked composition students to draw out their ideas about the research process before library instruction to stimulate active thinking by students and again at the end of the term, thus allowing students to illustrate, literally, how their research process had evolved over the semester.²²

Research process drawings may also be used to work with patrons to develop new library services or improvements to existing services. Mattern, Jeng, He, Lyon, and Brenner describe a project at the University of Pittsburgh in which early career researchers—post-doctoral researchers and faculty—were asked to sketch their discipline-specific research practices in a focus group setting.²³ After participants were finished with their sketches, they were divided into smaller groups and asked to share and discuss their processes. The purpose of this research was to inform planning for the library’s data research services, though it is clear that this method could be used for gathering information about many types of library services and resources. It may also build understanding of and goodwill between the work of librarians and other college and university faculty and staff.

Cognitive Maps

While drawing can provide insight into how participants complete a process, it can also be used to explore participants’ ideas about and use of space, including the activities and practices that they engage in. Cognitive mapping, also known as mental models, are visual representations by participants of how they see places, people, and activities in play in their spatial environment. Cognitive mapping is one method for learning about what students are doing in which places and the reasons those places are important to them. ERIAL project researchers used cognitive mapping in their study of students’ academic practices at five Illinois colleges and universities; participants were provided with blank paper and pens and were “asked to draw a map of the area of interest, whether a library, room, or campus.”²⁴ In the ERIAL project, participants were given blue, green, and red pens and asked to switch pens after two minutes, for a total of six minutes of drawing time. The use of multiple pen colors “allowed the researchers to learn which elements of the map students drew first, second, and third and provided both spatial and temporal data about how respondents conceptualized spaces.”²⁵

While cognitive maps do not require students to trace a linear path through their days, much can be learned about students’ academic environments and how they intersect with other areas of students’ lives. Locations, resources, tools, and other items that are most important to students are more likely to appear in their maps.²⁶ When using cognitive mapping with students, the ERIAL researchers learned that in one library, students did not identify strongly with services and resources located in high-traffic areas, which suggested ways to restructure the layout of the library to better serve students.²⁷ Gourlay, Lanclos, and Oliver have used cognitive maps to explore how undergraduate and graduate students, researchers, and faculty use digital and non-digital tools and practices in their daily life and academic work.²⁸ Their research revealed that “the reasons these students locate themselves in particular places have less to do with the ‘absolute’ qualities of a particular place,

and more to do with a complex calculus of motives, including not just their intentions at that time, but the surrounding context of their unfolding day.”²⁹

Cognitive mapping can also work well as an icebreaker in teaching or professional development contexts. We have incorporated a cognitive mapping exercise into a panel presentation with colleagues at a national conference with more than 150 attendees, and have asked smaller groups of thirty to sixty people to participate in cognitive mapping activities as part of workshops on research methods.³⁰ We distribute a worksheet and ask attendees to take between two and five minutes to sketch their learning or scholarly spaces, though we do not include multiple pen colors in these large-group cognitive mapping activities. After reminding attendees to label the features of their map, we ask them to discuss their maps with a partner, then to share out with the entire group. Guiding questions for discussion include asking participants what they notice in their drawings, what features are important in a good learning space for them, and what does not work for them. Using this method with librarians, faculty, graduate students, and staff has helped us reflect together on our assumptions about our students’ academic practices and model an activity that we can incorporate into teaching or other undergraduate contexts.

REFLECTIONS

We have found visual prompts to be highly valuable in our research, and we wholeheartedly agree with Cox and Benson’s suggestion that LIS research would benefit from “more imaginative approaches to eliciting and analyzing qualitative data.”³¹ The visual prompts for semi-structured interviews discussed here do just that while also bringing many strengths to LIS research. They are a proven way to engage participants as co-researchers and can provide a focus for semi-structured interviews. Visual prompts can increase the credibility of a study by producing data that is rich in personalized detail while at the same time allowing “time for the participants to reflect on their lives without the direction of an intrusive research voice.”³² The ready sources of visual data generated by these research methods can also complement other data sources, especially data from quantitative assessments that are often a feature of LIS research studies. Visual data can be incorporated into presentations and publications to augment textual data, which can be powerful and convincing when presented to policy stakeholders and in other forms of advocacy.

While the strengths of visual prompts in LIS research are many, there are also complications in using these methods. As with much qualitative and ethnographic research, it can be more time-consuming to collect and analyze visual data than is required by other methods, such as survey-based research. It is not necessary to enroll a large number of participants in a study using these methods since the generation of a statistically significant data set is not the research goal. In fact, even with a small number of participants, the visual methods described here can generate a great deal of data, sometimes more than can be easily managed or analyzed. Starting with a pilot project that enrolls five or fewer participants can assist researchers in planning for a full study and allocating appropriate resources, personnel, and time.

As with any research method, there is a need for training in both how to design research projects more generally and how to conduct semi-structured interviews specifically. Working with the human subjects that participate in our research typically requires education and certification from the Institutional Review Board at our colleges or universities as well. Furthermore, researchers must pay special attention to the ethical issues around visual artifacts created by participants, including consideration of anonymity and intellectual property. It is also important to note that the use of visual prompts may exclude individuals with vision-related disabilities, and it is always worthwhile to consider mixed-methods research whenever possible.

We encourage LIS practitioner-researchers to experiment with and incorporate visual prompts into your research protocols. There is real value to these methods, even in smaller studies, which ultimately can help us gain deeper understanding of our patrons' experiences and their needs both inside and outside the library. As librarians, we can stay current with new developments in specific library services, resources, and space use practices, but research with our own communities can illuminate our local contexts and the ways that patrons are actually using our libraries. The results of visual research can complement and complicate the results of surveys and other quantitative data collected both by the library (e.g., gate counts) and the university (e.g., student experience surveys). In sharing the detailed, nuanced, visual and textual data with faculty, administrators, students, and others at the college and university, we become more effective advocates for our communities and their academic needs.

NOTES

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