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Engaging, Reflecting, Listening: The Undergraduate Research Process

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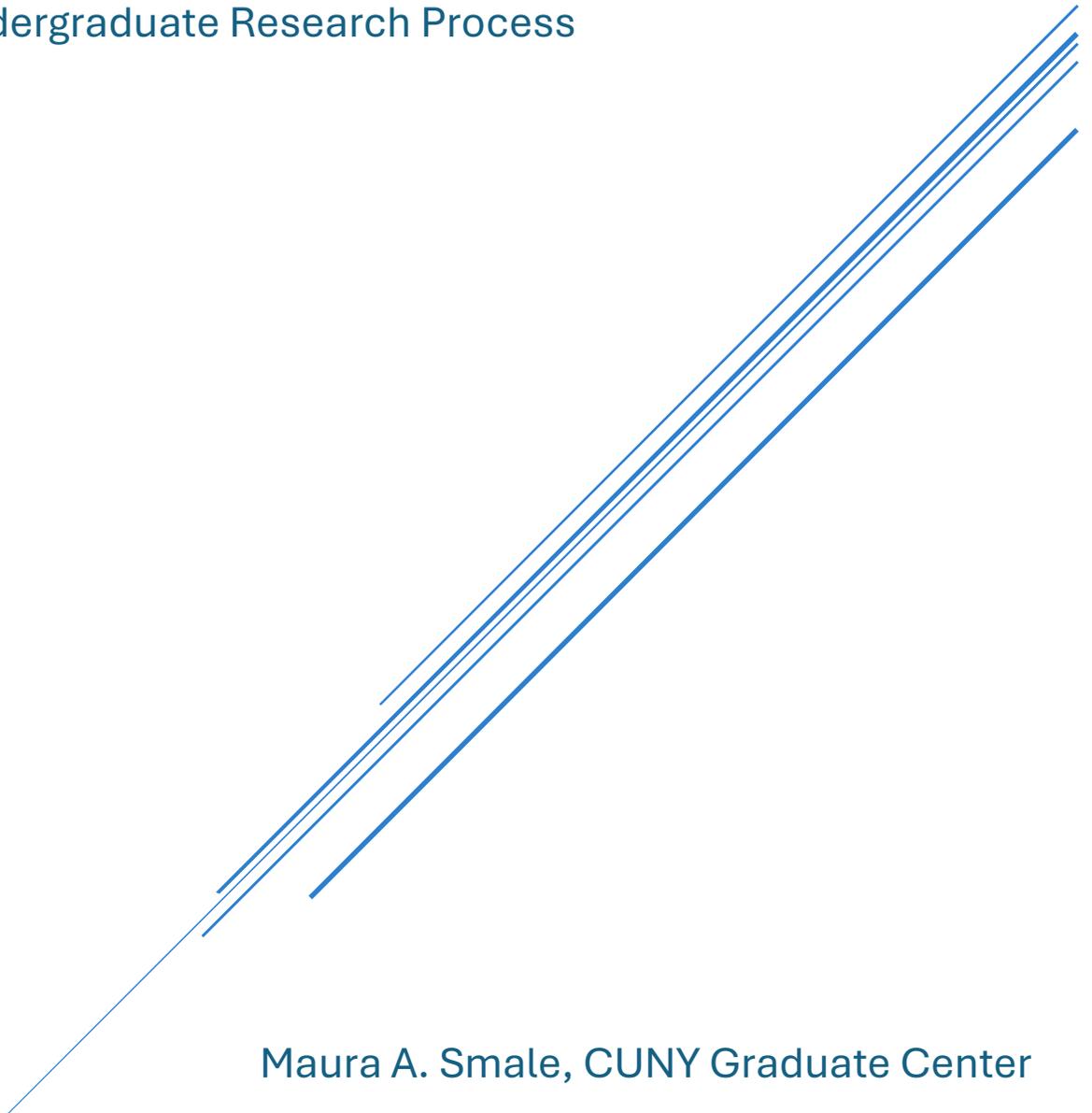
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ENGAGING, REFLECTING, LISTENING

The Undergraduate Research Process



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Summary

This study investigated the kinds of information literacy and library support that undergraduates found useful when completing a research assignment. Through weekly questionnaires with students on their experiences doing research for their English composition class, we explored the ways in which college students study, research, and complete their assignments, including the tools and processes that they find most helpful as well as the ways in which they need more support. Our research provides insights into the student experience for both library program development and English composition faculty and program directors.

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Introduction

An English composition course or course sequence is a common requirement for undergraduates. These courses typically aim to introduce students to the practice of academic research, reading, and writing, skills students will develop further as they continue in their college career. For many students college-level research and composition is a new process, and they often benefit from support both in and beyond their course.

This study investigated the kinds of information literacy and library support that undergraduates in English composition at Brooklyn College, City University of New York (CUNY), found useful when completing a research assignment. Through weekly questionnaires with students on their experiences doing research for their English composition class, we explored the ways in which college students study, research, and complete their assignments, including the tools and processes that they find most helpful as well as the ways in which they need more support.

As a form of assessment, the qualitative data collected in this research study provides insights into the student experience for both library program development and English composition faculty and program directors. As faculty librarians we see the research process from a different perspective than their course professors, engaging with students outside the classroom. We are always eager to understand what kinds of information literacy and library support students find useful when completing research assignments to inform our strategies at reference desks and in library research instruction. Composition instructors may find these results helpful in highlighting and confirming the usefulness of specific classroom strategies. The insights gained from students' descriptions of their accomplishments and struggles in their research process also provide librarians with opportunities to dialogue with English composition faculty about how best to support students' research. Ultimately, our goal is to help students better do their work.

We have been conducting qualitative research into the student experience for nearly a decade and a half, using a variety of qualitative interview methods to explore how, when, where, and with what tools students study and do their research.¹ As librarians we have been particularly

¹ Maura A. Smale & Mariana Regalado. 2017. "Understanding the Whole Student: CUNY Undergraduates' Lived Experiences," Keynote Address, *Teach at CUNY Day Conference*, 08-May. Slides & Notes https://academicworks.cuny.edu/ny_pubs/273/, Video <https://www.youtube.com/watch?v=atYR1WKSmmY>; Maura

interested in the research process as well as where and how students choose to study. In our prior research we used retrospective research process interviews to learn about the research process from students to gain insight on the ways in which college students study, research, and complete their assignments. In this study we set out to explore how students thought and talked about their research process over the entire timespan of their work on a writing assignment. We explored which elements of the course and research process students experienced as success or frustration, as well as the kinds of support that they found useful, to better understand the tools and processes that were most helpful to them.

Institutional Context

Brooklyn College is a baccalaureate college of CUNY offering a wide range of majors to its 14,970 undergraduates and select masters degree programs to 2,841 graduate students. The majority of students transfer in (51% in Fall 2019), largely from one of the seven community colleges in the CUNY system; 83% of CUNY's 4-year college students attended New York City public high schools. In Fall 2019 the undergraduate enrollment at Brooklyn College was 0.2% American Indian/Alaska Native, 21.9% Asian, 26% Black or African American, 17.6% Hispanic/Latinx/e, and 34.4% White. Like most CUNY colleges, Brooklyn College serves many historically excluded students, including 31% in the first generation of their families to attend college, and 58% of undergraduates receive the federal Pell grants awarded to low income students. CUNY is overwhelmingly a commuter university, and students commute an average of 45-60 minutes each way to campus from all five boroughs of New York City as well as Long Island and New Jersey, using public and private transportation.

Like all CUNY undergraduates, Brooklyn College students have a wide range of backgrounds and prior experiences with research and writing. English Composition I and II are foundational courses at the college and aim to “introduce students to modes of academic writing and help develop and refine writing skills that will serve students in all academic disciplines.” With our mission to support and develop students’ competencies in research and information literacy – finding, critically evaluating, and using information in their coursework – Brooklyn College librarians are longtime collaborators with faculty in English and across the college.

A. Smale & Mariana Regalado. n.d. “Results & Findings,” *Undergraduate Scholarly Habits Ethnography Project*, <https://ushep.commons.gc.cuny.edu/>.

Method

During 2018-2019, Brooklyn College students enrolled in English Composition II were invited via email to participate in our study about how they completed their research assignments for the course. Our study was independent of the course; while all English Composition II instructors were informed about our research, they were not told which students chose to participate, nor did they have access to or see student responses to the study questionnaires. Faculty were encouraged to direct students who had questions about the study to communicate with us. Students who participated in the study received a \$30 gift card at the end of the semester.

In Summer 2018 we piloted our study with one section of English Composition II, and one student participated in the pilot study. We ran the study again in the 2018-2019 academic year with all sections of the course: 17 sections in Fall 2018 and 88 sections in Spring 2019. All students in the course received an email explaining the study and providing instructions on how to participate, beginning with completing the informed consent form. In Fall 2018 there were 29 students who consented and 21 who participated in the study consistently, and in Spring 2019 there were 257 students who consented and 85 who consistently participated. The Brooklyn College Institutional Review Board reviewed and approved this research study, and students were assured that all questionnaire responses would be anonymized.

Students who volunteered to participate in the research study completed an online form consisting of 6 multiple-choice and 8 short answer questions on their experiences doing research for their class for 10 weeks total out of our 15-week semester. We began the questionnaire distribution in week 5 of the semester; while there are variations in the syllabus for each section of the course, by week 5 students in most sections are beginning work on a research assignment. Each week we asked questions about the evolution of students' research topics, challenges and opportunities they had encountered in their research process, how they were feeling about the process, and what support would be useful to them. At the end of the semester we asked students to look back and reflect on their research process.

Altogether, there were 107 students over the three semesters of our study with questionnaire responses that were robust enough for data analysis. When data collection was complete, we used an inductive approach based on grounded theory to identify emerging themes in the free text questionnaire responses for all 107 students. We used the Dovetail qualitative data analysis application to code these responses for further analysis.

Results

Student responses to the survey clustered around five broad themes: topic development, finding sources and evidence, feedback and instruction, the writing and revision process, and time and motivation. The prevalence of codes about writing underscores the interconnected and iterative experience of the research and writing processes. Most students who completed surveys gave answers that encompassed multiple themes, and the primary focus of a student's answers often shifted from week to week as the semester progressed. For example, a student who participated in the study in Fall 2018 gave a fulsome response in Week 7, soon after they had been assigned a research paper, touching on all the themes:

Q. What, if anything, helped you the most this week?

A. "A very brief discussion with my teacher about if my research question is too broad was definitely helpful."

Q. What, if anything, did you find frustrating about your work on this assignment this week?

A. "The frustrating work is keeping track of sources that I have not yet read and am not sure I could even use; reading a promising 22-page article that ends up having no relevant information is tiresome."

Q. What, if anything, would make your work on this assignment go more smoothly?

A. "My assignment would go more smoothly if I simply had a clearer schedule, or designated specific time for me to work on it each day/week. With the majority of my midterms happening next week, it is hard to find time to focus on my research."

In this report we focus on student responses centered around the three broad, interconnected themes of topic development, feedback and instruction, and managing time. We illustrate each theme with a student narrative vignette, followed by discussion. We selected three students with detailed and thoughtful answers each week to create a narrative vignette for each theme. On our preliminary survey distributed at the beginning of our study, all three of these students indicated that they were 18-19 years old, were in either their first or second semester, and had started at Brooklyn College rather than transferring in from another institution. Of the three, one was an education major, another a psychology major and the third was undecided at the time they completed the preliminary survey. All three students reported that they had

received prior instruction in research in high school, and two were also taught to do research in middle school, college, or both; all three reported feeling confident and prepared for the upcoming research component of their English Composition II course.

The Centrality of Topic Development

Vignette

In week five of the semester when the first survey was sent out, Zakiyah's class was working on a shorter argumentative essay and had already started discussing the main research assignment. She indicated that the class discussion that week had helped her "to understand the topic more" and "to determine a claim," while at the same time she was frustrated by a topic she was not interested in. She was looking forward to completing the assignment.

In weeks six through nine Zakiyah's expressions of frustration and worry with the stage of the process she was in each week followed the development of the research paper process. In week six she fretted that the class theme was "not a topic I'm interested in;" then was more focused in week 7 on "finding a good question to answer." In weeks 8 and 9 her frustrations reveal her progress selecting "an interesting topic that relates to the task" (week 8) and narrowing it by "getting the topic to be something of interest and not being too broad" (week 9). Starting in week 10, Zakiyah's frustrations shift from her interest in her topic to focus on "finding articles and the annotated bibliography."

In response to each week's survey question "What are you looking forward to?" Zakiyah's answers were consistently focused on getting started on or completing the next step in the process: first completing and handing in the argumentative essay in weeks 5-6, then plunging into the final research paper. including finalizing her topic and getting it approved in weeks 7-9, presenting her topic to the class and professor for feedback in weeks 9-10, creating an outline in week 10, working on her draft and getting feedback in weeks 11-12, "getting done" in week 13, and handing in her assignment in week 14.

Topic development was front of mind for Zakiyah throughout the process of working on her research paper, and her answers underscore the importance of discussion and peer comparison in the process of understanding and normalizing topic development. From week 5 when class discussion helped her to understand how to "determine a claim," to week 8 when she reported, "asking friends what their research topic might be on," and week 9 when she stated that

what helped was, “listening to my peers topic, I was able to narrow down and pin the topic that I wanted to do.”

Discussion

Topic development – including brainstorming, narrowing to a manageable focus, and sometimes changing, or evolving, topics – is the foundation of successful research for a course assignment. When students can find a topic they are genuinely interested in and curious about, it inspires research questions and points the way to specific research tools. The research process itself is part of narrowing and solidifying the research question and propels students’ writing process. As librarians, we often work with students when they have a research assignment but not necessarily a concrete topic or research question. Much of the work we do in library research instruction sessions and at the reference desk is to guide students in topic development *through* the research process.

Student responses to the weekly questionnaires confirmed that interest is key to topic development. Many students talked about finding an interesting topic, or the converse – their frustration with their work on their research assignment they do not find interesting. Students acknowledged that it was much easier to work on their research assignment when they personally had an interest in or were passionate about the research topic they had chosen, and they note that many faculty put some constraints on students’ ability to choose their own research topic.

What, if anything, did you find frustrating about your work on this assignment this week?

“I do not really know what to write about. So, I’m going to have to research until I stumble upon something interesting and, who knows how long that will take.”

“At first I found it frustrating that my topic was very boring in my opinion, and then after I shifted to a new thesis I feel more confident and ready to get to work.”

“I am still finding it frustrating to come up with an original idea or topic that’s both interesting and I can gather a lot of information on.”

As we saw in Zakiyah’s research process above, narrowing a topic could be a challenge for students. They often struggled to narrow their topic to something that could be accomplished successfully within the parameters of their assignment, including page count and format. We know this anecdotally from our work with students in the library: when students ask for help with research at the reference desk they often start with a topic – climate change, reproductive

health – that is far too large and multifaceted for their assignment. Sometimes students express a frustration with finding too many sources when they start their research, which is often a result when they have not yet developed a concise topic or research question to explore.

Clear expectations from course instructors help students develop a topic for their research assignment. As librarians our conversations with students are most successful when we can lead them back to their assignment requirements and work with them on developing an achievable research topic. The students who participated in our study clearly articulated that understanding the expectations really helped them to develop a workable topic; this, along with plentiful feedback, is another major theme resulting from our research.

The Value of Expectations & Feedback

Vignette

Elijah shared in the preliminary survey that he felt prepared for the research assignments he would encounter in his English Composition II course, though he did express some trepidation about writing a long research paper, something he'd not done before. Elijah's professor provided detailed instructions to the class on the structure of the research paper in week 5, and Elijah appreciated the scaffolding for the assignment and the discussions in class of assignment requirements and strategies. In week 6, he shared details on what helped him the most that week:

"Before every first draft, my classmates and I have a sheet to fill out and hand into our professor to receive comments and good constructive criticism on our research topic and question. This helps me because he leads me into a more efficient way of thinking critically about my topic and how to organize my essay."

Elijah's professor also incorporated in-class peer review into the research assignment from the very beginning of the semester. Elijah looked forward to the frequent opportunities for peer review with his fellow classmates, both to strengthen his own work and to help his peers be successful.

Elijah's course required a shorter research paper followed by a longer one; by week 9 while he was relieved to have finished writing and revising the first paper, he began to express some anxiety about the second, longer paper. For this second paper Elijah was dissatisfied with his professor's expectations, sharing that his work would go more smoothly with "more guidance

from our professor, he really isn't teaching us how to write it or what the format looks like.” Elijah did share that his class had a library research instruction session to learn how to access research resources, and that his professor reviewed citation styles with the class, which he did find useful. He continued to express appreciation for feedback opportunities from his peers, both group peer review and class discussions.

Toward the end of the semester Elijah continued to express a wish for additional guidance from his professor, on both the structure of the research paper as well as the structure of the required presentation, including slides, on his research. Elijah especially noted the utility of “seeing my classmates do their presentation first,” both to see an example of a presentation and slides as well as to get insight into the kinds of questions and feedback to expect from his professor. Feedback from his classmates continued to be useful and appreciated by Elijah as the semester wound down and he finished up his paper and presentation.

A desire for clear expectations and helpful feedback came through in Elijah’s responses throughout the semester: he was grateful when it existed, and frustrated when it did not. At several points in the semester, he wished for "more guidance from my professor on how to structure a proper research paper." However, in the post-survey Elijah noted that the most helpful thing provided by his professor when completing the assignment was that "he broke down our research paper into separate parts such as first draft, annotated bibliography, etc. It allowed me to manage my time properly and not stress as much when it came time to write everything."

Discussion

The importance of clear expectations was a consistent theme among all the students who responded to our survey. Student responses highlighted the importance of understanding instructor expectations related to picking a topic for their research assignment, finding relevant research sources, organizing their ideas and structuring their paper, and time management in particular. While some other students noted frustrations with missing expectations and lack of feedback, most students didn’t articulate what was missing as much as they recognized what had worked.

What, if anything, helped you the most this week?

“I look forward to more class discussion as this pushed me to think differently. Additionally, hearing ideas from other students is very helpful.”

While some students reported that their professors shared handouts with instructions for their assignments, or rubrics, printed or written instructional materials were not mentioned often. Of greater value to a wide range of students were instructor-led class discussions. Students commented that class discussion provided multiple perspectives on how to research and write from their peers and instructor, and safe spaces for thinking out loud. Class discussions also seemed to normalize the topic and paper development process for students – several students mentioned that they appreciated hearing about how their peers’ work on the assignment was progressing. When it worked well, the class discussion format harnessed the power of the peer group in a structured, positive way. Notably, it was something students consistently looked forward to.

What, if anything, are you looking forward to about this assignment next week?

“The class discussions are very informative and allow us to all share what we think and helps others formulate their ideas better. I benefited from the other students knowledge through the class discussions and the questions they asked and need clarification in, that I didn’t know I needed help understanding”

Another important way expectations were clarified was through helpful feedback directly from the instructor. Some students indicated how useful they found one-on-one interactions with their professor, whether in the scheduled office hours or before, during, or after class. The most mentioned areas that students reported finding useful were topic development and getting started on their assignments.

What, if anything, helped you the most this week?

“Receiving feedback from my professor and a writing tutor has assisted in my understanding of how a research paper should be organized and given me a better idea of how to refine my paper.”

Students also appreciated peer feedback including smaller, assigned peer reviews as part of class, as well as conversations about their assignment with friends outside of class. While it was a new process for some, our student participants were uniformly appreciative of opportunities for peer review, or frustrated when their peers’ feedback was not helpful to them.

What, if anything, helped you the most this week?	What, if anything, are you looking forward to about this assignment next week?
<i>“We sat in groups during class and it really helped me. I got feedback from my peers and brainstormed about possible thesis statements.”</i>	<i>“Maybe get some insight from my classmates and how they went about organizing their essay.”</i>

As librarians, of course we were very interested to see comments from students about the value of the library research instruction session or working with a librarian one-on-one. While most students did not comment on it, those who did found it useful. Especially when held in person, the library instruction session provided opportunities for class discussion and peer mentoring, as this student noted when they mentioned sharing articles.

What, if anything, helped you the most this week?
<i>“The session my class and I recently had in the library helped as the librarian taught us how to properly find reliable sources and clarified a confusion I had. Classmates stumbled upon articles they thought might be helpful and emailed me the links.”</i>

Finally, an important basis for understanding expectations were instructor-provided structured steps towards the final paper. Students were positive about being asked to create outlines, annotated bibliographies, and drafts, sometimes accompanied by examples or models of each deliverable. They reported that clear, scaffolded processes gave them confidence while they developed topics, to see where they were headed, to understand what the end product might look like, and most often mentioned, helped them to better manage their time.

What, if anything, would make your work on this assignment go more smoothly?
<i>“When one assignment builds off of another, I find it easier to progress because I already have a framework for what I am going to write.”</i>

The Challenges of Time Management

Vignette

Robin’s responses in the preliminary survey spoke to perhaps the most thorough preparation in prior experience for undertaking the research assignment. They had been taught to do research in

both high school and already in their college careers, and had a sibling who was further along in college who also helped them with their research assignments. However, Robin also mentioned in the preliminary survey that they struggled with procrastination, foreshadowing their responses in the weekly survey. Their concerns about time management were a strong thread throughout the semester; they mentioned their concerns about getting their assignment finished by the due date in all but one of their weekly survey responses.

One of the ways that Robin framed concerns about procrastination and motivation was in their stated desire for reminders about deadlines, stating that their work on their assignment would go more smoothly with "someone [to] remind me every day that the papers or specific papers are due so I do not have to stress about the paper a day before." They also speculated that a schedule for the various components of their research assignment would smooth their work, suggesting "I would hope I can create a set schedule for myself to finish the papers drafting and researching via reading through the texts of multiple sources." Robin also highlighted their frustration with the time required to find appropriate and relevant sources for the research assignment, noting in several responses that they could not find free access to the sources they needed for their paper, and that it would take additional time for them to locate those sources.

As the semester wrapped up, Robin continued to share their frustration over their own procrastination, and one week before finals they noted that they had been unable to do their assigned readings for other courses because they were still working on the research assignment for English Composition II. They also bemoaned that they hadn't finished a draft of their paper as the class was beginning to engage in peer review, though the following week they were successful in finishing the draft in time for peer review and class discussion, which they found useful. And while Robin felt frustrated by their procrastinatory tendencies throughout their work on their research assignment, they shared in the post-survey that they had met their goal "to finish the paper before it was due which I handed in a few days earlier."

Discussion

One of the biggest challenges students had when approaching and completing their research assignments was managing their time. Students – like all of us – are busy; they have many commitments beyond their college coursework, often including paid work, extracurricular activities, or family responsibilities. For most students English Composition II was not the only

course they were enrolled in, and generally students said that it would ease their progress on their assignment if they had less work in their other classes, which would give them more time for research and writing. Time is also likely a factor in the number of survey responses we got as the semester progressed. The frequency of student responses decreased over the semester, which may be a result of increasing constraints on students' time impacting their ability to complete the weekly questionnaire.

What, if anything, are you worried about working on this assignment next week?	What, if anything, did you find frustrating about your work on this assignment this week?
<i>“Having enough time to do it and the 10.000 other things I need to do.”</i>	<i>“I think time has been a continual frustration to me because I often find myself crunched for time.”</i>

Like Robin, many students also noted the need to organize and plan their work on the research assignment, as well as their tendency toward procrastination. For some, the iterative work of topic development and finding sources seemed surprisingly time-intensive, which perhaps indicates an expectation that the work of a research paper is primarily in the writing rather than the research. In the end of semester questionnaire, Robin responded that one thing they would have done differently is “change some of my reading sources but [...] it took too much time.” Their expressed desire for “a set schedule” for the assignment points again to the usefulness of scaffolding, and the potential for deadlines throughout the semester for components of the research paper to assist students in resisting procrastination.

The Value of Listening to the Student Experience

Listening to students reflect on their experiences may reveal barriers and affordances that can inform how we encourage students' success in their coursework. This study showed how much students valued clear expectations and ongoing opportunities for feedback from multiple sources; students wanted to be engaged in the composition process – researching, reading, writing, revising – and in learning. The principle takeaway from these results is how *engagement* in the process increased student motivation: bored or worried students became excited when their topics gelled; feedback from professors boosted student confidence; feedback from classmates in discussions and peer review encouraged students and led them to become invested in each

other's work; structured assignments helped students to be organized, see their own progress, and manage time.

Notably, what we heard from these students tracks with what we heard from participants in our prior research, in particular in retrospective research process interviews where we asked students to recall their research process through drawings and interviews conducted in 2009-2011 with 119 students at six CUNY colleges. In that study, one student summed up the importance of having a topic you are passionate about when they practically burst into the interview room and told us, "I wanted to come and talk to you because I want to tell other students the trick to writing an A paper! You have to love your topic!" We also heard often from students in our earlier study about the value of scaffolding for supporting organization and time management, and the value of constructive feedback from instructors. We note one difference in results from 2009-2011 and 2019 in relation to in-class peer review. In 2009-2011, students uniformly dreaded in-class peer review even as they acknowledged that it had been helpful to their work. A decade later, the students who participated in our study seemed more comfortable with, and even looked forward to, the in-class peer review process.

Finally, while a minority of students mentioned the library in either study, they were quite positive across time about its value for improving research skills when they did mention it. Librarians can support students' research as an integral element in a cohesive approach to the research and writing process. They can intervene to clear obstacles, for example, for students who are unaware that the library provides free access to research articles, as Robin was seeking. In a class visit for a library research session, librarians can find opportunities to support students through fostering peer discussion about topic development, about feedback, about managing time over the research and writing process, and about the "scholarly conversation."

This research study was implemented in 2019, and the increased hybrid and online teaching and learning environment since the covid19 pandemic began poses new challenges and opportunities in the student research process. While students new to online learning often assume that the time required for online courses is less than for in person courses, that is often not the case, and especially with mixed learning modalities time management is ever more important for students. Course instructors and librarians may find it useful to discuss these changes with their students and encourage their reflection on the research process. Preliminary questions may include:

- How is getting help on research different, and is it easier or more difficult for students to get help? Are students more likely to go to office hours online, or by appointment? Do students feel that office hours are more useful?
- Are students more likely to just use an internet search? Or did they become more aware of library research resources? Is the class visit to the library (either online or in person) more or less relevant?
- In an environment where so much more happens online, how can librarians leverage chat, email and other platforms for productive outreach/work with students.

Course instructors and librarians can also encourage students to reflect on their research and writing process through a variety of methods including in-class discussion, reflection assignments, or even quick anonymous surveys. In addition to gaining insight into best practices, opportunities for reflection can help students understand their own process and become more self-aware by considering and reflecting on their own practice.