A Triumph, a Fail, and a Question:

A Pilot Approach to Student-Faculty-Librarian Research Collaboration

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Introduction

In 2010, Amherst College received a two-year planning grant, followed by a multiyear implementation grant, from the Andrew W. Mellon Foundation for faculty to develop a set of seminars in the humanities and social sciences. The idea was to introduce sophomores and juniors to approaches to research as a process: how to frame a researchable question, develop investigative strategies, and identify and use sources. The seminars would help students engage with topics that intersect with the scholarly interests of a faculty mentor, potentially leading to a senior thesis—a model more commonly seen in the lab sciences. The Mellon pilot eventually included the following elements:

- Four to eight research seminars each spring semester, capped at six students

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- Courses built around or directly contributing to a faculty member's own research, ideally resulting in collaborative faculty-student publication, exhibition, or presentation
- A subject librarian affiliated with each seminar, participating at varying levels, from on-call to fully embedded
- Access to other instructional staff, including project collaboration with Academic Technology Services professionals or museum curators
- A voluntary six- to eight-week summer research fellowship component for participating seminar students

Forty courses have now been offered in areas, including material culture in art history, urban planning and educational opportunity, interdisciplinary explorations of sensory systems, the world of the King James Bible, performance culture at the turn of the century, and archives of childhood. Over six years, fifteen faculty members, 229 students, and seven librarians have been involved in the seminars. Nineteen students have co-published with a faculty member in a peer-reviewed journal, seven books and ten journal articles have incorporated contributions from student researchers, and six exhibitions have been mounted in the college's library and museum.[1] Supporting this extended pilot project has encouraged librarians to stretch our ideal forms of teaching research dispositions and scaffolding undergraduate research.

Librarians working with the Mellon seminars are involved with a wide variety of activities: traditional instruction sessions on how to develop a research prospectus or using a bibliographic-management tool like Zotero, consulting on course design or digital-scholarship pedagogy, serving as interlocutors for proposal workshopping, or teaching weekly "research lab" sessions to complement course content. Our roles particularly evolved to support the initiative during the summer, when students stay on campus to continue intensive work on their projects. This opportunity came at a moment of real transition for the institution—which was in the midst of a wave of faculty retirements and hiring—and the library. A new library director had just arrived, the entire Research & Instruction department turned over during the course of the project, due to retirements and promotions, and, as a result of increasing demand for our work with undergraduate research, we were able to add two additional teaching-librarian positions that also addressed such identified needs as outreach and user experience. The shifts in our priorities and identity seem to echo the debates and direction of instruction librarians in the profession more broadly over the same period.

Background

The original grant proposed experimental seminars as a way to expand the student research program beyond thesis work and a longstanding summer-science program by developing "activities that help us (1) enhance student understanding of how research questions are developed and pursued—and how they connect to the "big questions" underlying the liberal arts, (2) better prepare students for successful thesis projects in the humanities and social sciences, and (3) foster a climate of intellectual excitement and engagement that pervades both the classroom and daily life at Amherst." Library instruction at Amherst, a selective residential liberal-arts college with 1,800 undergraduates and an open curriculum, is already very context-specific. Many departments offer research-methods courses for majors, usually with librarian support. But while 41 percent of seniors complete an honors thesis, survey data several years ago revealed that the experience could be isolating and fragmented. We saw potential in the Mellon grant to lay more explicit groundwork for non-STEM students embarking on independent work.

First, we had to articulate our role in the project. The grant had been awarded before any of the current Research & Instruction librarians were hired, and the library hadn't even been referenced in the original application. The faculty principal investigator declared in an initial meeting that he didn't want any of "that database stuff." Instead, he sought proposals and input from librarians regarding the forms that collaboration could take, urging us to think creatively to reinvent the library's relationship to faculty and curriculum. Our instincts were to build on previous course-integrated instruction and thesis consultations as well as to think about opportunities for embedding instruction, like those discussed by Dewey and by Smith & Sutton.[2]

We initially assigned the liaison librarian for the faculty member's home department to each seminar, and their involvement that first semester indicated a range of possible activity. One seminar had only informal consultation with their librarian. Another, in classics, had two sessions with the librarian to introduce research tools in that discipline. The seminar on education and history included a session on Zotero and organizing research, as well as a class covering resources very specific to their project, including government documents and newly acquired microfilm. The last seminar had the closest collaboration, with a librarian teaching five sessions that were heavily integrated with the content of the course, each breaking down a type of evidence that could be used to investigate a potential research question in law and culture. The distribution was similar across eight seminars the following year: two courses had only a session or two with their librarians to cover bibliographic management and basic research; two others, in art history and religion, had librarians teach two to three sessions focused on disciplinary

approaches to research and following citations; and four of the courses had quasi–embedded librarians supporting their learning as they took on projects heavily based in archival or special collections in alternative newspapers, history of the early-modern book, nineteenth-century children's literature, or missionary papers from Turkey.

Because many seminars were interdisciplinary, we later went beyond liaison assignments to match seminars to librarians whose capabilities and interests closely aligned with a particular topic or mode of inquiry. As the program developed, skills such as data management and coding transcripts were integrated into research-team instruction, as were technology concepts like card-sorting and wireframing for web design. One other reference point in the first years was the University of Adelaide's Research Skills Development Framework, which helped us to describe a "research pedagogy" and distinguish the bounded-research approach we taught in regular instruction sessions from the kind of scaffolded to open-ended research characteristic of the Mellon seminars.[3] Librarians taught skills early on to help students practice asking researchable questions, discover and evaluate information, and synthesize findings. As they developed proposals at the end of the semester and moved into more independent research in the summer, goals shifted to supporting student-initiated inquiry and coaching teams through testing schemas and refining their own methodologies.

Partnerships

As the program continued, librarians played an increasingly connected role. Our department head attended working-group meetings, individual librarians took on key responsibilities in the seminars and in project management, and summer involvement and facilitation expanded. We explored how we could more fully partner with faculty, pairing their deep disciplinary understanding with our focus on the research process to address each seminar's subject area and intended outcomes. Faculty, realizing this, appreciated spending less time on nuts-and-bolts mechanics and more time on higher-level concepts. This model allowed for contextual application of big-picture process issues—a more nuanced version of the specificity we had been bringing to workshops and one-shot instruction sessions.

While not every seminar made use of its liaison librarian in an embedded sense, several things made for a very different experience of offering research support: early conversations with a faculty member, familiarity with an entire syllabus (including often doing all the course readings), getting an advance look at assignments, and regular check-ins with the course. In many cases, the librarian would suggest places of convergence during the semester where a hands-on

instruction session might make sense with the content planned for that week, e.g., exploring the history of polling in newspapers in relation to public support for the death penalty, or tracing the underlying research for a popular account of the Silk Road by connecting examples to the book's bibliography. In several other courses, faculty came to increasingly value an "unsyllabus" at times, where the messiness and uncertainty of developing a research question or proposal focus would benefit from building flexibility into planning.

Eighty-nine students over the past four years have stayed after the completion of the semester to continue their work with faculty, and the library is now a hub of summer research activity. Most Mellon seminar teams set up camp in the library—with librarians continuing to act as on-call coaches—and Research & Instruction librarians convene weekly Research Table meetings for students to share progress, ask questions, and learn from peers. We've established a spinoff Thesis Research Table and broadened our workshop offerings and community-building events to better serve the needs of student researchers over these months while faculty are often not on campus. We've also inaugurated an annual daylong showcase of undergraduate research and creative work in the spring, in partnership with the Writing Center, Center for Community Engagement, and Academic Technology. The event is held in the library and current and past Mellon students are well represented.

Reflection

There have been ripple effects from the Mellon initiative in nearly every aspect of our work as Research and Instruction librarians. Our approach has led to a broadening of the research skills and methods we teach, a greater focus on transferable aspects of learning to do research, and improved relationships with teaching faculty. There has been increased collaboration with non-Mellon faculty as word has spread, and we have seen more student-to-student referrals as well. Student evaluations described greater understanding of how to develop researchable questions, analyze research methodologies, and evaluate the relevance of sources. Our extended engagement with the motivated students in these disciplinary seminars also led to more interaction with many of them as they subsequently became thesis writers in the same departments.

The research undertaken by students in the Mellon seminars involved a sustained project that was longer than a final course paper but shorter than an honors thesis. The highly situational orientation of the research in these seminars prepared students for thesis research in a new way, revealing the benefits of a longer timeframe for a research experience, especially for transfer or less-prepared students. For librarians, this also meant being more delib-

erate about the affective and metacognitive elements of research instruction, particularly using the summer to introduce often-tacit aspects of research and peer learning (and to encourage students to explore and report back on off-campus experiences, as well).[4] When asked about tangible skills they took away from summer Research Tables, students described learning how to build in time for reflection and understanding the emotional ups and downs involved. Our work with these students in particular led us to incorporate more aspects of team-based research—including an awareness of the stages of successful team formation and project management—and how to teach communication skills to support it, for students' dual roles as peer colleagues and working with a faculty lead investigator. For us, this not only applies to classroom instruction but also extends to building community, increasing librarian visibility, and connecting to other instructional staff on campus, such as the writing center and academic technology.

Some of the successes of this project have been accompanied by challenges. We continue to wrestle with practical questions that have arisen regarding fuzzy boundaries when we're not the instructor of record, as well as pedagogical questions of how best to integrate subject content with information-literacy concepts, as Bowler and Street found.[5] The sustainability and scaling of an embedded model is also a perpetual concern. Although the work has been incredibly satisfying for librarians involved, it has led to an expanded workload in summer, taken more time to be truly and effectively embedded in these courses, and meant disproportionate attention to some disciplinary research practices over others in a situation where each librarian works with multiple academic departments.

Expressly designating these seminars as experimental has helped emphasize an iterative and developmental approach to research, encouraging students to try out new ideas (a potentially vulnerable but generative space not always common to the Amherst experience). We have had success working with faculty to "unstuff" syllabi in order to create more time and space to focus on process, and we now regularly collaborate on rethinking course outcomes. There is, of course, the potential to make this program stronger. Attending every class session doesn't necessarily ensure collaboration between faculty and librarians, and we have begun to develop strategies to address this concern. In one seminar last spring, instead of having the librarian join the course four times over the semester, the faculty member asked her to hold weekly "research lab" sessions to provide more in-depth, hands-on instruction that built to the students' collaborative research proposals. While an excellent opportunity, this format needs some revision for better integration: the labs lost the symbolic value of being in the same classroom with the professor, though their worth was evident when the students needed much less time to get up to speed for summer research.

Assessment

In addition to their regular course evaluations, students generally filled out separate evaluations for their faculty about how Mellon seminars differed from other courses. While librarians didn't see most of those, we did talk with faculty individually and in the planning group about changes to larger structural issues as well as specific session topics. We spearheaded a concerted focus on building a research community in the summer, which in turn led to more awareness of the increasing number of students doing independent work and a resulting task force convened by the dean of faculty's office to better coordinate summer opportunities for students. Because of the relationships we developed with students, we got quite a bit of informal feedback. The library sponsored an information session each fall to promote the Mellon seminars to other students before course pre-registration, and these participant panels were very helpful for candid reports of how the previous seminars and summer research had gone.

Most valuable for formative assessment, though, were the weekly summer Research Tables, which were positioned at the point of need. We structured these sessions by asking teams to report on "a triumph, a fail, and a question" of the past week; besides facilitating peer learning, it allowed us to address unanticipated gaps and build essential concepts into the next version of the course. Many of these gaps involved research practices with concrete aspects—naming conventions for shared files, choosing coding software, finding CVs for scholars in a particular subfield, using the *U.S. Newspaper Directory* to identify what was missing from digitized coverage—that were situated in a larger social context of academic and research culture that we could unpack together and make more transparent for students.

What we heard overwhelmingly from students in evaluations and in person was that they became more critical readers, with much more attention given to how research is created or a claim is made—that the process was revealed and permission granted to "look under the hood" of arguments made by even senior scholars in a field. This experience also modeled pathways for how they might go about starting to research specific questions. Despite increased autonomy and self-direction in Mellon seminars, students told us that it was less intimidating than expected, that "this isn't just learning about something but doing it." While we hadn't been familiar with Indiana University's Decoding the Disciplines project at the outset of our experience, this collaborative approach to demystify how an expert would go about a disciplinary task was very consonant with our objective to make the research process more explicit.[6]

One of the original goals for the grant was to connect students to potential thesis topics earlier in their undergraduate careers, and this has indeed

been the case. While not every student developed Mellon research into thesis projects, quite a few continued in related areas, and many continued to make use of librarians as their "research coaches" through graduation. Initial analysis by our Institutional Research office shows that a much higher percentage of Mellon seminar students go on to complete a thesis: 68 percent overall, with increases from 10–37 percentage points for students of color, first-generation, and low-income students compared to non-Mellon students. Self-selection for the seminars is likely one factor, but the nature of these courses means that these students have previous experience with advanced research and with working closely with faculty and librarians.

Several academic departments have embraced the summer Thesis Research Table model of sustained support for their thesis cohorts, asking liaison librarians and writing associates to lead monthly meetings for them through the academic year, often with a rotating faculty partner. Feedback from students has guided discussion topics, with an augmented focus on scholarly communication and open access to be added this year to help bridge the transition from consumer to producer of information. In addition, the college's strategic plan recommended investigating half-credit courses, possibly taught by instructional staff, which could build on this departmental model or the weekly research labs in conjunction with the semester-long seminars.

Recommendations/Best Practices

Throughout the Mellon project, we've worked with faculty to articulate how this research seminar will be different from other courses in order to design the learning experience accordingly. The project's coordinating working group—with a librarian at the table with faculty—helped surface these issues; it also was the most effective mechanism to raise awareness among faculty about ways to define and incorporate the librarian role. For the librarians, we've had to be prepared to go beyond our comfort zones in terms of discussing course content, observing and deconstructing for students the research approaches of faculty members and their larger disciplinary or interdisciplinary communities, and thinking on our feet to solve problems that emerge. We did "translation" work to scaffold and interpret research processes in the archives, the GIS lab, art museums, the Folger Shakespeare Library, and other settings through give and take with the faculty instructors, librarians, and students. This immersive alignment with faculty research process has given us a deeper understanding of methodologies and practices in particular fields, which has also been very rewarding for our own intellectual engagement in our work.

These contexts and outcomes lent themselves organically to bigger-picture thinking. As the ACRL *Framework for Information Literacy for Higher Education* drafts and final version emerged over the same period, its focus on threshold concepts, dispositions, metacognition, and affective aspects of learning to do research resonated with our experience in these intensive settings.[7] It also prompted us to think about alternative research products, such as digital-scholarship projects, archival exhibitions, Wikipedia articles, or website development. Organizationally, the Mellon project helped us as a department in this time of transition to think about how to prioritize and scale our teaching, as well as about the nature of collaboration with faculty on research and acknowledgment of librarian work. As faculty considered the question of how to credit undergrads for contributions to their scholarship in the humanities and social sciences, they also came to us with questions about how to credit embedded librarians for their role in teaching or research support at an institution where librarians don't have faculty rank or tenure. Being able to draw on this experience was also crucial for librarian involvement in strategic planning around the integration of research and teaching, as well as on the committee examining potential changes to the college's curriculum.

In reflecting on the Mellon project as a whole, we identify several important elements of the experience:

1. Bringing our teaching identities into classrooms in a much more overt way, to where faculty have asked for librarians to co-teach or have considered fully collaborating on future research projects or seminars; this in turn creates increased awareness of the need for our expertise in teaching research-specific approaches for students.
2. The need for time to think through and continually revisit pedagogy for teaching the messiness of research and all it entails, including the need to negotiate conceptual space for this work in research seminars within majors modeled on the Mellon seminars. A larger question remains for how to scale this perspective for shorter engagements.
3. The ongoing balance between creating structure (including designing instruction and planning specific sessions) and thinking on our feet, which incorporates many other aspects of our personalities and scholarly/teaching/librarian identities—particularly in working with multiple cohorts over subsequent years.

Conclusion

The Mellon pilot project gave us the incentive and space to implement new ideas for teaching the research process. We drew on the new *Framework* to

further make sense of our own practice and make connections across outcomes and skills that might have seemed to fall outside library instruction previously. Most important, we were able to develop relationships with students and build trust with faculty as they took risks of their own.

Notes

1. Examples include Austin Sarat, with Katherine Blumstein '13, Aubrey Jones '13, Heather Richard '13, and Madeline Sprung-Keyser '13, *Gruesome Spectacles: Botched Executions and America's Death Penalty* (Stanford, CA: Stanford University Press, 2014); Hilary Moss, Yinan Zhang '12, and Andy Anderson, "Assessing the Impact of the Inner Belt: MIT, Highways, and Housing in Cambridge, Massachusetts," *Journal Of Urban History* 40, no. 6 (2014): 1054–078; Caitlin Britos '14, James Hall '15, Soo Kim '14, Daniel Schulwolf '14, *Karl Loewenstein and the American Occupation of Germany*, http://loewenstein.wordpress.amherst.edu; and *Unlocking Wonder: A Peek into the World of Luxury Cabinets* (art exhibition curated by Pablo Morales '16, Claire Castellano '16, Robert Croll '16, Martha Morgenthau '16, and Madeleine Sung '16, Mead Art Museum, Amherst College, Amherst, MA, October 25 2014–February 9 2015).
2. Barbara I. Dewey, "The Embedded Librarian: Strategic Campus Collaborations," *Resource Sharing & Information Networks* 17, no. 1–2 (2004): 5–17, doi:10.1300/J121v17n01_02; Susan Sharpless Smith and Lynn Sutton, "Embedded Librarians: On the Road in the Deep South," *College & Research Libraries News* 69, no. 2 (2008): 71–4, 85, http://crln.acrl.org/content/69/2/71.
3. John Willison and Kerry O'Regan, "Commonly Known, Commonly Not Known, Totally Unknown: A Framework for Students Becoming Researchers," *Higher Education Research and Development* 26, no. 4 (2007): 393–409, doi:10.1080/07294360701658609; see also http://www.adelaide.edu.au/rsd/framework.
4. Anastasia Efklides, "Metacognition, Affect, and Conceptual Difficulty," in *Overcoming Barriers to Student Understanding: Threshold Concepts and Troublesome Knowledge*, ed. Jan H. F. Meyer and Ray Land (New York: Routledge, 2006), 48–69.
5. Meagan Bowler and Kori Street, "Investigating the Efficacy of Embedment: Experiments in Information Literacy Integration," *Reference Services Review* 36, no. 4 (2008): 438–49, doi:10.1108/00907320810920397.
6. Leah Shopkow, "What Decoding the Disciplines Can Offer Threshold Concepts," in *Threshold Concepts and Transformational Learning*, ed. Jan Meyer, Ray Land, and Caroline Baillie (Boston: Sense Publishers, 2010), 317–32; see also http://decodingthedisciplines.org.
7. Association of College and Research Libraries, "Framework for Information Literacy for Higher Education," http://www.ala.org/acrl/standards/ilframework.

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