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# Student Instructional Histories: An Approach to Assessing the Reach of an Information Literacy Program

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## Introduction

In order to fulfill the requirements of accrediting bodies and professional organizations, information literacy programs traditionally report seat counts and the number of workshops offered. These library-centric data portray a somewhat limited picture of the pedagogical and curricular impact of information literacy instruction; they count seats, not students. The metrics neglect to represent the educational experience of the student and the institutional context in which the instruction occurs. To more accurately represent the reach and complexity of information literacy programming, a more nuanced and data-rich understanding of student pathways through the curriculum, and their exposure to the library along the way, is beneficial. This project integrates the methodology of curriculum mapping with data from student course registration and information literacy instruction to develop an expanded portrait of how students gain information literacy competencies as undergraduate and graduate students.

## Background

The Research and Instruction department within the Tisch Library at Tufts University, among other services, provides information literacy instruction to the School of Arts and Sciences and the School of Engineering. While individual teaching librarians are assigned liaison departments for which they provide information literacy instruction, all research and instruction librarians also participate in teaching within the First Year Writing Program, which makes up a large portion of the overall instruction load for librarians, despite being outside of their disciplinary liaison responsibilities. To maximize the reach and impact of the instruction program that aims to grow outreach and instruction in key areas (graduate students, new programs, underserved populations,

or departments), care must be taken in how finite instruction capacities are distributed. Librarians in this study, given this limitation, decided to look closely at two populations of students who receive library instruction at Tufts University: freshmen students enrolled in first-year writing courses and graduate students in the Urban and Environmental Policy and Planning program.

Courses offered through the First Year Writing Program fulfill a “Foundation Writing” requirement that undergraduate students are expected to complete as freshmen. Liberal arts students are required to take two semesters of college writing, and engineering students are required to take one semester of college writing in order to graduate. However, students may fulfill one or both parts of the writing requirement through standardized test scores, such as a score of 4 or 5 on the Advanced Placement English Language and Composition Exam. Without looking at course registration data, it is not possible to tell how many students take zero, one, or two first-year writing courses as freshmen.

First-year writing courses are taught through the English, philosophy, and education departments. Courses taught through the English department include information literacy outcomes, and students are expected to write at least one 5–7 page paper using research. Beyond common course learning outcomes, there is a wide range of instructor approaches, expectations and assignments to the “research paper.” As a result, some classes have a clearer fit for information literacy instruction than others.

The Urban and Environmental Planning and Policy program (UEP) is a small two-year master’s degree

program enrolling 35 new students each fall on average. Unlike the First Year Writing Program, there is one library liaison to UEP. There are five core classes that all students must complete and five areas of curricular focus. The curriculum is practice-based and shaped around competencies that include skills for policy research, community building, and quantitative and qualitative analysis. Like the First Year Writing Program, opportunities for information literacy instruction vary depending on instructor approaches, type of research product, and curricular focus. The library has a history of working closely with the program's core courses, but collaborations with faculty teaching elective courses have been uncommon.

### Literature Review

Often the collection of statistics representing library usage has been driven by the reporting requirements of professional organizations and accrediting bodies. The metrics, as a result, have largely focused on quantitative statistics such as door counts, circulation usage, and numbers of library workshops.<sup>1</sup> However, larger professional shifts have placed a new focus on richer assessment approaches to examine library value and qualify impact.<sup>2</sup> Library professionals involved in assessment now take a more critical approach to determining what should be measured and what methods for assessment will most accurately examine those questions.<sup>3</sup> In terms of information literacy instruction, programs may capture learning goals and lesson plans, in addition to head counts and session numbers. They may also connect that work to the academic curricula to capture a more complex portrait of what occurs in a learning environment and the impact of library instruction on student success.<sup>4</sup>

Curriculum mapping has been used by teaching and learning programs within libraries to identify opportunities for integrating information literacy components into disciplinary curricula and scaffold learning objectives to continuously build competencies as students move through a curriculum.<sup>5</sup> Curriculum mapping allows librarians to plan for where and when information literacy skills are needed by learners, as they are to move through and past threshold concepts and build on knowledge developed within the curriculum.<sup>6</sup> However, library instruction programs that employ curriculum mapping as an assessment tool may not be able to represent student learning outcomes in the

same way that academic departments do, because they may not have control over the frequency or amount of time when they are able to work with students.<sup>7</sup>

Curriculum mapping may provide a tool for advancing ways to move beyond or around these contextual limitations in targeted areas of the curriculum that are primed for information literacy education. Using this process, librarians may want to use additional factors to create a fuller picture of how student learning occurs; while understanding the structure of academic department's curriculum is one piece, examining how a typical student might progress through their course work and encounter actual library instruction along the way is also valuable.

### Methodology

To pilot this programmatic assessment approach, this project combined and analyzed data from three sources: informational literacy program data, student course registration data, and curriculum maps representing degree requirements and course offerings. Specifically, librarians examined three years of data for one graduate program, UEP, and one undergraduate general education program, First Year Writing Program, using unique student and course identifiers. By connecting these data, librarians were able to create profiles of selected campus populations to illustrate how students encounter information literacy instruction as they move through programs and majors. The approach aims to reveal whether all, some, or no students in a course section had prior information literacy instruction and examine patterns of instructional reach and timing for different populations.

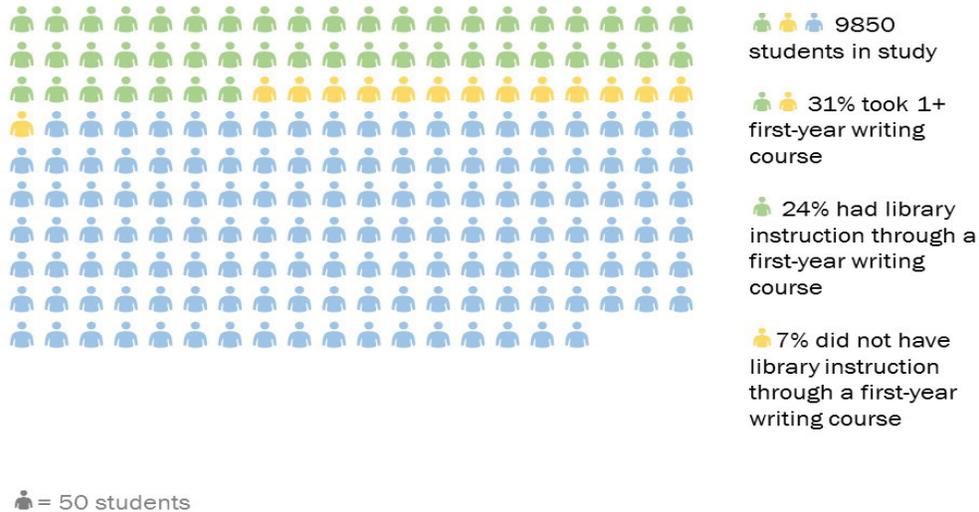
### Results

#### First Year Writing Program

Our study included 9,850 students who took at least one undergraduate course through the Schools of Arts and Sciences and Engineering from the fall 2013 through the summer 2016 semester. During this period, 31% of students took one or more of the 349 classes offered through the English, philosophy, and education departments that fulfilled the first-year writing requirement. The library provided one or more instruction sessions for 266 first-year writing classes, reaching 24% of students through library instruction (see Figure 1).

**Figure 1. Library Instructional Reach to Arts, Sciences and Engineering Students through the First-Year Writing Program Foundation Requirement**

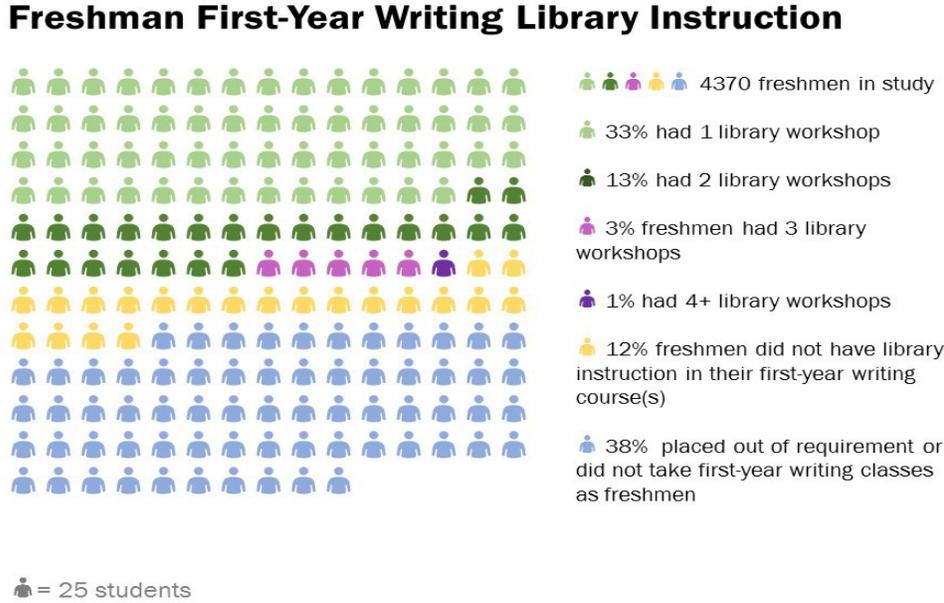
**First-Year Writing Program Foundation Requirement**



Examining the class year of students who were taking first-year writing classes revealed that 87% of students enrolled in these classes were freshmen. As students are expected to fulfill the first-year writing foundation requirement during their freshman year, it is useful to consider the library instruction experience of freshmen through first-year writing

courses. Of the 4,370 freshmen in our study, 62% took one or more first-year writing courses during their freshman year. Library instruction for students varied, ranging from one to five workshops for 50% of the students who took first-year writing courses as freshmen (see Figure 2).

**Figure 2. Library Instructional Reach and Frequency for Freshman Arts, Sciences and Engineering Students through the First-Year Writing Program Foundation Requirement**



One challenge in planning information literacy instruction for courses that fulfill the second part of the first-year writing requirement is that class sections include a mix of students who may be experiencing information literacy instruction for the first, second, or third time. By examining the instructional history of each class section, librarians could consider specific information literacy outcomes from past library instruction for students in each class section. This information informed planning and improved librarians' ability to communicate with course instructors about student exposure to information literacy outcomes.

Examining registration information for additional courses taken by freshmen allowed librarians to consider alternative teaching scenarios to improve the reach of library instruction and reduce the teaching load for librarians. Librarians examined syllabi for the 50 highest-enrollment classes for evidence of strong information literacy components and identified three high-priority classes: Intro to Psychology (PSY-0001), Intro to Community Health (CH-0001), and Intro to International Relations (PS-0061) (see Figure 3). Thirty-five percent of freshmen in our study took one or more of these classes during their freshman year, making them key targets for outreach to develop programmatic partnerships.

**Figure 3. Potential Instructional Reach and Teaching Load for Freshman Classes with Strong Information Literacy Components**

Courses	Class Sections Offered During Study	Potential Number of Freshmen Reached	Potential Freshmen Instructional Reach
● First Year Writing Program	349	2185	50% of freshmen

Courses	Class Sections Offered During Study	Potential Number of Freshmen Reached	Potential Freshmen Instructional Reach
<ul style="list-style-type: none"> <li>● Intro to Psychology (PSY-0001)</li> <li>● Intro to Community Health (CH-0001)</li> <li>● Intro to International Relations (PS-0061)</li> </ul>	21	1535	35% of freshmen

**Urban and Environmental Policy and Planning**  
 During our three-year data period, 203 students were enrolled in UEP, and 85 courses were offered. Out of a population of 203 students, 103 students were enrolled in a course where library instruction was offered in some form at least one time. These sessions were typically between forty-five and ninety minutes in length. One-fifth of these students

received library instruction during the sample period three or more times. Problematically, a sizable number of students received repeated librarian instruction while nearly 50% of students received no library instruction at all. This initial analysis revealed the inconsistent experience of students in the UEP program with information literacy instruction (see Figure 4).

**Figure 4. Library Instructional Reach**

Number of Instruction Sessions	Count of UEP Students	Percentage of UEP Students
0	100	49%
1	27	13%
2	33	16%
3+	43	21%

Our approach to understanding the instructional histories of students in the UEP program is slightly different than with freshman students in the First Year Writing Program. The UEP population is a defined group that moves through the master's

program in a fairly structured way. There are requirements associated with a core curriculum and categories of electives that students who complete the program must fulfill (see Figure 5).

**Figure 5. Urban and Environmental Policy and Planning Curriculum and Instructional Reach**

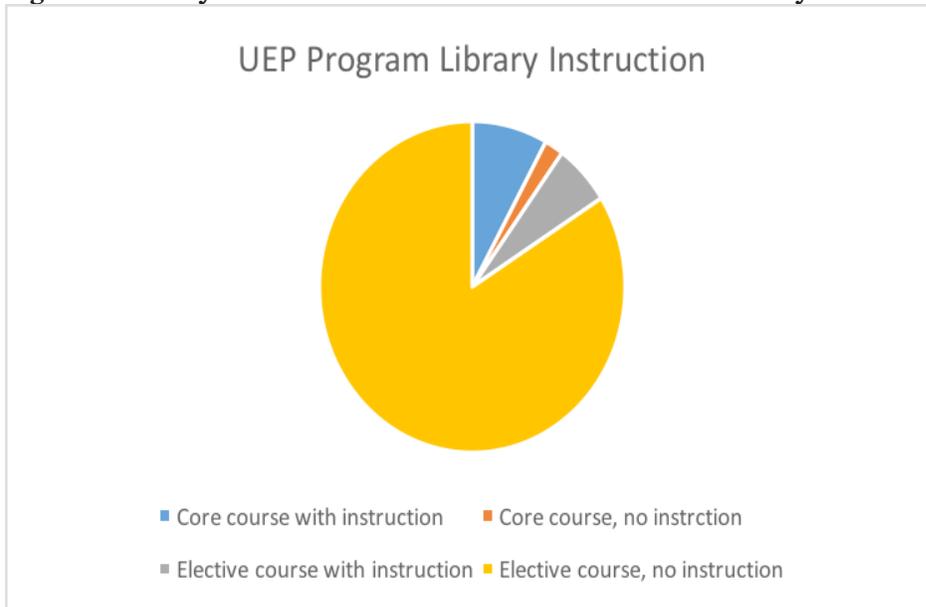
Core Courses	Elective Course Categories
<ul style="list-style-type: none"> <li>● Foundations of Public Policy and Planning</li> <li>● Economics for Policy and Planning Analysis</li> <li>● Cities in Space, Place, and Time</li> <li>● Quantitative Reasoning</li> <li>● Field Projects: Planning and Practice</li> </ul>	<ul style="list-style-type: none"> <li>● Sustainable Environment</li> <li>● Social Justice and Community Development</li> <li>● Policy and Governance</li> <li>● Built Environment and Design</li> <li>● Methods and Techniques</li> </ul>

Core Courses	Elective Course Categories
<i>4/5 core courses had library instruction at least once during the three-year study period</i>	<i>3/45 elective courses had library instruction at least once during the three-year study period</i>

Librarians have provided information literacy instruction in only 6% of all courses offered in the UEP program; however, those instructional contacts have included most core courses in the program, which have higher enrollment than elective courses. Thus, involvement in a limited number of the program’s courses has still resulted in contact

with over half of all students in this study (see Figures 6 and 7). This review revealed that, while librarians did not work with half of the students enrolled in the program, involvement in a very small proportion of courses did have a substantial reach to the population.

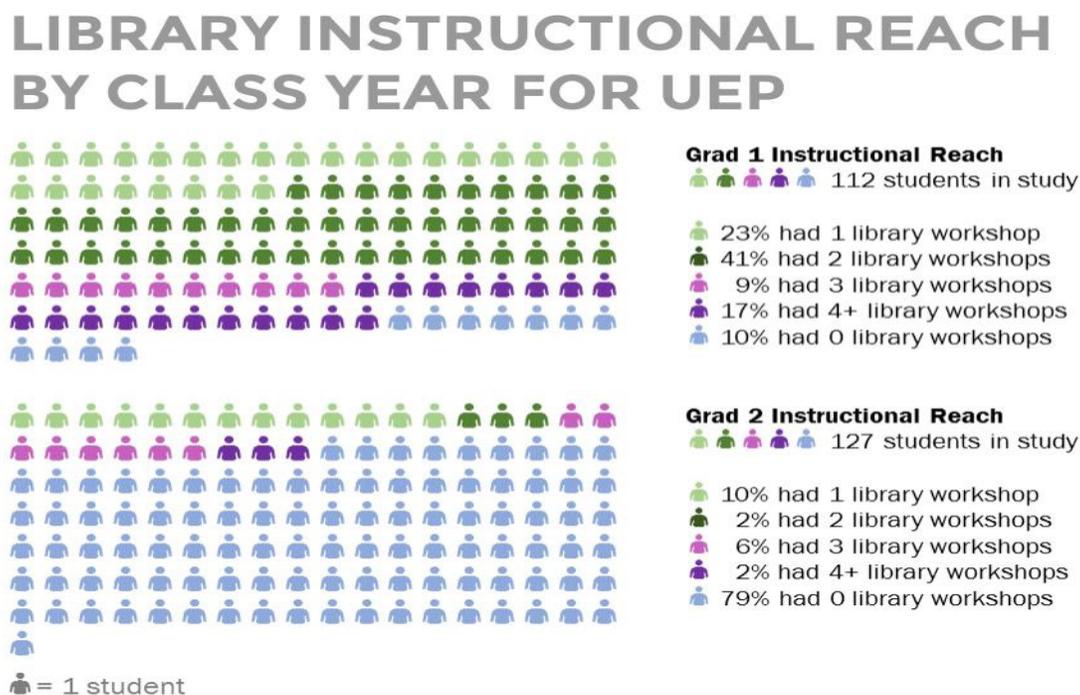
**Figure 6. Library Instruction for Urban and Environmental Policy and Planning**



The timing of information literacy instruction typically occurs in the first year of the UEP graduate program for students. During the second year of

the program, when students are more likely to be enrolled in elective courses, they receive library instruction far less frequently (see Figure 7).

Figure 7. Instructional Reach by Year in Program for Urban and Environmental Policy and Planning



Though targeting all areas of the core curriculum may seem like an obvious way to provide information literacy instruction to all students, it has only reached half of the students in the program due to inconsistencies in who teaches each course and when a student enrolls in a core course within the program. Further, integration within the core courses in the UEP program is not consistent or equal; that is, librarians worked with some courses regularly or several times a semester, while in others, librarians may have only worked with a course one semester within the timeframe of this study. This inconsistency is the result of a reactive instruction program built on requests from individual faculty, not intentional outreach based on where library instruction fits best within the program. Though this common model may be problematic for library instruction programs, it is not necessarily one that is not worthwhile in terms of contact with students and building faculty relationships. However, the information garnered from this analysis provides a lens for how librarians might consider expanding or contracting our instruction resources in strategic ways.

This methodology allowed librarians to ask important questions about whether our involvement in the core courses was as valuable, impactful, and

efficient as targeting other parts of the curriculum, and question how many students might be reached if librarians taught in different areas of the curriculum. For example, librarians might consider not teaching in a core class that lacks a formal research assignment and instead target a related elective on a similar topic with a high enrollment and a research assignment as part of the course requirements.

These considerations lead librarians to conduct a review of course syllabi for the UEP program to identify key courses with strong information literacy components and compare that information with student enrollment data, timing, curriculum requirements, and information literacy instruction statistics. Several observations resulted from this review, which will inform future outreach and curriculum planning in the library. Several examples are included below:

- UEP 234: *Qualitative Skills for Planning and Public Policy* is an **elective course** that is a practice-based introduction to public policy planning. Students are required to understand research methodologies and use both primary and secondary data. While these requirements demand information literacy competencies, there are no related research-based assignments in the course other than an extra-credit research

paper. This is a small class (only eight graduate students), and the library has worked with the class only once during the sampling period.

**Recommendation:** This course is an example of a low-priority target for growth in the instruction program. Future outreach to this area of the program is not an urgent need.

- By contrast, UEP 252: *Cities in Space, Place, and Time* is a **core course** that revealed itself to be a high priority for information literacy instruction. This course aims to critically examine urban environments, and students are required to find and use information about a variety of community stakeholders to create an interactive map. This assignment requires students to synthesize a good amount of grey literature and data. The course has a comparatively large enrollment of students, and librarians may find opportunities to support the students learning through data and GIS services, digital design, and information literacy skill development. The library has offered three instruction sessions for this course, but they were all held in the fall of 2013. **Recommendation:** Given these factors, reengaging with this course will be an important goal within the instruction program.
- In the **elective course** UEP 285: *Food Justice: A Critical Approach*, students learn to critically examine the development of systematic structural and socio-spatial inequities and injustices in food systems. Librarians have never worked with this course, though there are a number of interesting opportunities to support the development of information literacy skills. As the students are introduced to frameworks for understanding policy developments related to food, information seeking behaviors that employ a critical lens to investigate whose perspectives are represented in existing information power structures in communities and scholarship will be important. This is a project-based course where groups will be required to define a food issue or research question and synthesize regulations, legal information, public opinion, and scholarly research to inform their analysis. **Recommendation:** This course has an enrollment that is average in size, which, coupled with a strong information literacy component, will be an excellent focus for future instruction outreach.

Librarians learned that not all information literacy instruction is created equal in the UEP program, so

integrating the data points of student registration, curriculum documentation, and library instruction exposes key opportunities to integrate new and emerging library services and expertise and examine if librarians are in the right places within the curriculum at the right time. This analysis helped answer questions about instruction and outreach priorities within programs and departments supported by the library. It is a frame for librarians to understand our instruction outreach priorities, but it does not mean that they will stop teaching in those courses. Instead, it is a way of understanding and reflecting on the economy of our instruction effort.

## Conclusions

This student-centered approach to assessing an information literacy program—using curriculum mapping and course registration data—accounts for the frequency, timing, and depth of library instruction. By connecting available data and analyzing its complexity, librarians discovered a valuable tool for scaling and setting strategy in instruction programs. There are few libraries that claim to be well staffed, particularly in areas of public service. This approach informs our understanding about both the impact and effectiveness of our current instruction, as well as targets for future growth, so that the time and effort devoted to library instruction is maximized.

This project advances the conversation about developing meaningful and comparable library metrics for information literacy programs. The approach can be adapted to suit the available student data streams and assessment needs of information literacy programs at other colleges and universities. The authors plan to further this analysis by evaluating related research consultations in the programs examined for this study and develop tools they can repurpose for conducting future investigations.

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