# Accidental Information Literacy Instruction: The Work a Link Landing Page Can Do

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## Abstract

This article reports on a surprise finding from a larger, long-term study that explores ways to provide effective information literacy instruction (ILI) in asynchronous, online-only courses. The finding occurred during a term in which students participating in the study received no formal ILI. However, these students did not turn to the web at large when doing independent research as some literature might predict. Instead, analysis of their final research project bibliographies suggests students modeled the search scopes of select prior assignments from that same course. This finding has potential to inform parameters for adapting pedagogy for asynchronous, online-only instruction as well as ways librarians and teaching faculty collaborate to incorporate ILI into curricula, particularly in online contexts.

*Keywords*: Model, Modeling, Links, Asynchronous, Online, Online-Only, Information Literacy, Information Literacy Instruction, Instruction, Collaboration, Pedagogy, Curriculum, Curricula, Scaffolding, Research Skills, Search Scope, Teaching Faculty, Instructors, Search Behavior, Research Behavior

## Introduction

According to a 2018 report from the Babson Survey Research Group (Seaman, Allen, & Seaman), enrollment in online courses by undergraduate students in the U.S. increased for the 14th consecutive year. In keeping with this national trend, Portland State University (PSU) in Portland, Oregon has offered an increasing number of online courses every year for the past several years. According to the Office of the Registrar, PSU offered 65% of its courses online only in the 2016-2017 academic year. However, PSU Library statistics show that during that time only

1% of librarian-taught information literacy sessions were for online-only courses. Across universities, face-to-face sessions regularly involve a librarian visiting a class to teach students research skills, especially with respect to developing search terms, locating and accessing credible information such as refereed articles and book chapters, and evaluating information for credibility. These are some of the learning objectives particular to information literacy instruction. Thus, the discrepancy between number of online-only courses offered and information literacy sessions taught raises questions about if, and to what extent, students receive information literacy instruction (ILI) in their online-only courses.

In a representative case at PSU, instructor, Professor Sarah Sterling, had been teaching anthropology courses online for six years without including any formal ILI when she and librarian, Elizabeth Pickard, began a research study to see which modes of ILI worked best in asynchronous, online-only courses such as hers. In thinking about modes of ILI to try, the instructor stated, "The big difference between online versus face-to-face is the element of real-time interaction, the ability to explain how to distinguish credible from less credible sources, and why these are important." Librarians and teaching faculty at many universities face similar questions as they struggle to meet the relatively unexplored challenge of how to adapt ILI for online-only contexts. Online-only courses, especially asynchronous ones, require different modes of ILI than those used in face-to-face, hands-on sessions typically taught by librarians. As universities continue to move courses online,

librarians are compelled to consider different ways to provide ILI in an asynchronous context, and, in the name of parity, how to ensure comparable rigor and effectiveness to that of ILI received in face-to-face courses. The most effective ILI—that which incorporates fundamental aspects of face-to-face sessions such as active teaching by an ILI expert and hands-on work by students—occurs in a piecemeal way online at PSU. In the rare cases that an asynchronous course does involve ILI, it usually consists of some combination of scaffolding research skills into the course curriculum and the provision of digital learning objects such as pre-recorded ILI sessions, online tutorials, and quizzes.

This case study reports on a surprise finding from the ongoing larger study. The larger study, currently titled "ILI in Online-Only Courses: Which Approaches Work Best?" explores ILI best practices in asynchronous contexts. The surprise finding provides a particularly granular look at student search behavior as it relates to the instructor's purview, modeling aspects of prior coursework, and link landing pages. The finding is from the first term of the study during which students received no formal ILI. Despite the lack of formal ILI, students did not immediately turn to Google when doing independent research. Instead, they modeled specific aspects of prior assignments from the class. The finding points to ways librarians and teaching faculty might leverage this modeling to incorporate ILI into curricula, generally, and provides examples to consider when developing assignments for asynchronous, online-only instruction. It also reveals an avenue for easy-to-implement, low-risk collaboration between librarians and teaching faculty.

## Literature Review

How do students go about choosing sources? Even in broad strokes, this is a multi-part question: where do students search, how do they choose where to search, and how do they select specific sources from among their search results? Within the answers to these questions lie a multitude of possibilities, each of which offers opportunities for targeted information literacy instruction. Existing literature on information literacy instruction has looked at bibliographies to explore student research behavior but has focused primarily on face-to-face courses.

Bonnie Gratch (1985) made one of the earlier claims that research paper bibliographies reflect the effects of "research skills instruction." Since Gratch's early work, numerous researchers have analyzed citations with this idea in mind, including Lantz, Insua, Armstrong, and Pho (2016), who looked at bibliographies with the idea that "Discovering the reasoning behind student research behaviors will allow information literacy instruction librarians to make more informed pedagogical choices for library instruction" (p. 263). In both face-to-face and online-only contexts, bibliographies can provide a granular view into how students conceive of credibility at a given point in time. While most studies have looked at bibliographies from face-to-face courses that included ILI, this study explores the "reasoning behind student research behaviors" in online-only courses that did not involve formal ILI.

In terms of searching for sources, multiple studies have found that students prefer what they perceive as ease-of-use over credibility. Several studies have identified students' preferences for databases that were easy to find and use and sources that were easy to get in hand over credibility of sources (Biddix, Chung, & Park, 2011; Head & Eisenberg, 2009; Joo & Choi, 2015; Purdy, 2012). However, what students perceived as easy was relative to what they were accustomed to doing. Head and Eisenberg found that while college students "had fewer techniques for conducting research and finding information than for writing papers" (2010b, p. 19), their search methods also "appear to be driven by familiarity and habit" (2009, p. 15). Joo and Choi found that, while credibility had the weakest influence on students' selection of the internet over library resources, and "usefulness" combined with ease-of-use had the strongest influence (p. 272), students' familiarity with sources and "good search skills" (pp. 286-7) actually made students more likely to choose library resources. These findings allow for the possibility that ILI could change what is "familiar" and help students develop new habits including solid "techniques for conducting research" and "good search skills."

Other recent studies look broadly at how students develop better research techniques over the course of their time in college and if ILI is a factor in that change. These studies found that undergraduates began their research assignments by using the web at large, but that students' preferences for where to search and whom to ask for help changed over the course of their education (Macmillan, 2009; Pickard & Logan, 2013; Thomas, Tewell, & Willson, 2017). Carol Perruso looked at how both ILI and instructors' requirements might bring about such changes

to students' research practices. Perruso (2016) found that "students were more likely to start their research with library resources if they had librarian instruction that semester" but that instructors' source requirements were also associated with increased use of library resources (pp. 623-5). Not surprisingly, explicit ILI appears to help students become familiar with the broader landscape of resource possibilities. How, then, can librarians and instructors apply these insights to asynchronous, online-only courses for which the typical one-shot ILI sessions are not feasible?

One option is to adapt pedagogy and instruction to target places students are already looking for clues about how and where to search for credible sources. Research suggests that students look primarily to the instructor's course materials for such direction, even in the absence of detailed source-requirements. Head and Eisenberg (2009) found that for course-related research, in the absence of detailed source-requirements, students "turned to course readings because the resource was inextricably tied to the course…and [the materials] were sanctioned by the instructor" (p. 15). In later studies, Head and Eisenberg found that students sought two major research contexts during their research processes, namely "the situational context or figuring out an instructor's expectations for an assignment" (2010a, p. 6) and "the information-gathering context or locating and selecting research resources" (2010b, pp. 14-18).

Thus, existing literature suggests both that instructors' expectations strongly influence how students approach research and that students'

research behaviors are improved by having attended a librarian-led ILI session. In other words, collaboration between instructor and librarian is key to students becoming information literate. As Pickard (2017) notes, "Ultimately, academic teaching faculty and librarians share a common mission: helping students produce college-level research" (p. 180). However, collaboration between librarians and teaching faculty is not always easy to facilitate. Saunders (2013) discusses librarians' perceptions of the obstacles facing such collaboration and notes that they "…tend to believe that faculty are hesitant to give up class time for information literacy instruction because they already have too much content to cover" (137). Yevelson-Shorsher and Bronstein's (2018) research at least partially confirms this belief, noting a faculty comment that, "At the end of the day it [information literacy] gets pushed aside because we have so much material to teach, so much work to do…" (p. 543). Mackey and Jacobson (2005) identify several barriers to collaboration from the faculty perspective, some of which include "…lack of time, lack of awareness of students' information literacy needs, belief that students learn these skills and gain this knowledge elsewhere…and a belief that information literacy instruction is the job of the library" (p. 143). They go on to conclude that librarians must "… realistically demonstrate the benefits of collaboration" (p. 144). In other words, teaching faculty may have a librarian teach a research skills session, but often, they may skip the session to save time, or assume students have already learned elsewhere how to do research. Moreover, teaching faculty do not necessarily recognize the

benefits of collaboration with a librarian, and librarians may be hesitant to reach out to them for fear of imposing. In asynchronous contexts where conventional, one-shot research skills sessions are not an option, collaboration may be even less frequent. Again, at PSU, statistics have suggested this is the case. (Portland State University, Office of the Registrar, 2017; Portland State University Library, 2017). This study looks at options for facilitating collaboration between librarians and teaching faculty in asynchronous, online-only courses and imagines what collaboration might look like in this context.

This study is unique in several ways. Unlike prior studies, it looks at the work of students in online-only courses. Furthermore, while existing literature indicates that, in the absence of ILI or explicit source-requirements, students often turn to course readings to devise search strategies for their course-related research, this case study reports on nuances of that behavior. The study provides a more granular glimpse at the ways students engage with the instructor's purview to set the search scope for their independent research. It also considers the corresponding implications for ILI and for collaboration between librarians and teaching faculty.

## Methodology

The focus of this case study is a surprise finding related to student search behavior, and its implications for instruction and collaboration. The larger study explored best practices for teaching information literacy skills in online-only courses. It examined student research projects from Anthropology 366 (ANTH 366) and Anthropology 368 (ANTH 368), taught by the same instructor, but incorporating different modes of ILI, over the course of six terms. This article discusses the work of students in ANTH 366 and ANTH 368 during the first term of the study, Spring Term 2016.

The researchers selected ANTH 366 and ANTH 368 because the instructor was already teaching them as asynchronous, online-only courses, and the 300-level courses shared the same prerequisites and structures. The assignments in both courses consisted of two reading review assignments, two discussion assignments, a take-home midterm exam, and a final research project that required students to generate a bibliography. For Spring 2016, the instructor taught both courses the same way she had been teaching them for several years, without any formal ILI or additional scaffolding of information literacy skills into the curriculum.

To recruit participants, the researchers sent an email to students in each class. Interested students uploaded a consent form to the course Desire to Learn (D2L) shell. Participating students received a $10 Amazon gift card. A total of 17 students (71%) from ANTH 366 and 19 students (79%) from ANTH 368 participated, and they collectively cited a total of 74 sources: 41 in ANTH 366 and 33 in ANTH 368. While the sample size was small, as a case study it allowed researchers to get a sense of the relatively unexplored landscape of online-only student research behavior.

The researchers looked to the bibliographies as "reflections of research skills instruction" (Gratch, 1985), but did not assign a rubric to measure findings as most citation analysis does. Instead, they used a grounded theory lens, which allowed for the "surprise" finding to emerge even
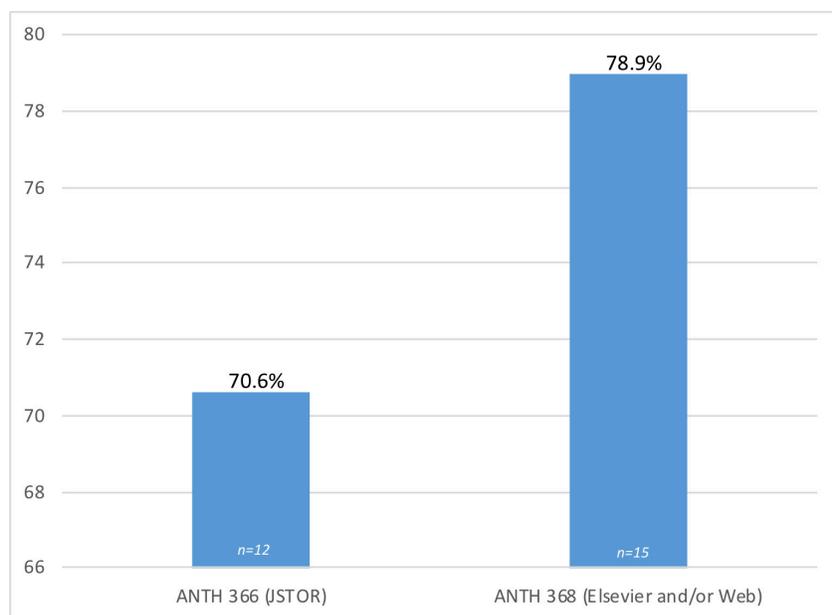
Figure 1: % Students Using Final Project Sources from Same Resources as Reading Review Assignments

though it was not the intended focus of the larger study. Grounded theory is useful when exploring new realms, such as online-only student search behavior, where existing theory might not fully apply or might not address broad or granular aspects of the new context. For the purposes of this article, the researchers used the "ask and answer" approach such that during coding they could ask which data to collect next and where to find them (Glaser & Strauss, 1967, p. 45). This approach was useful when it became apparent that, without instructor prompting, most students were visiting the same small number of resources. Unlike citation analysis using predetermined values, grounded theory allowed the researchers to notice the similarity and explore potential causes.

## (Surprise) Findings

What emerged from coding the participants'

bibliographies did not fully align with prior studies' findings. In putting together their final research project bibliographies—even in the absence of formal ILI—students did not automatically set the scope of their search to the web at large, as Joo and Choi (2015) or Purdy (2012) might have predicted. Nor did students work with a broad range of library databases as Macmillan (2009) or Thomas, Tewell, and Willson (2017) might have predicted if students were further along in their college careers or had previously received ILI. Initial coding revealed that ANTH 366 students cited many of their sources as coming from JSTOR, while ANTH 368 students turned primarily to Elsevier as well as the web. When the authors looked for data to explain these patterns, they realized that the majority of participants appeared to have returned to the scope they unearthed from select previous assignments in the same course, namely the reading review assignments (see Figure 1).
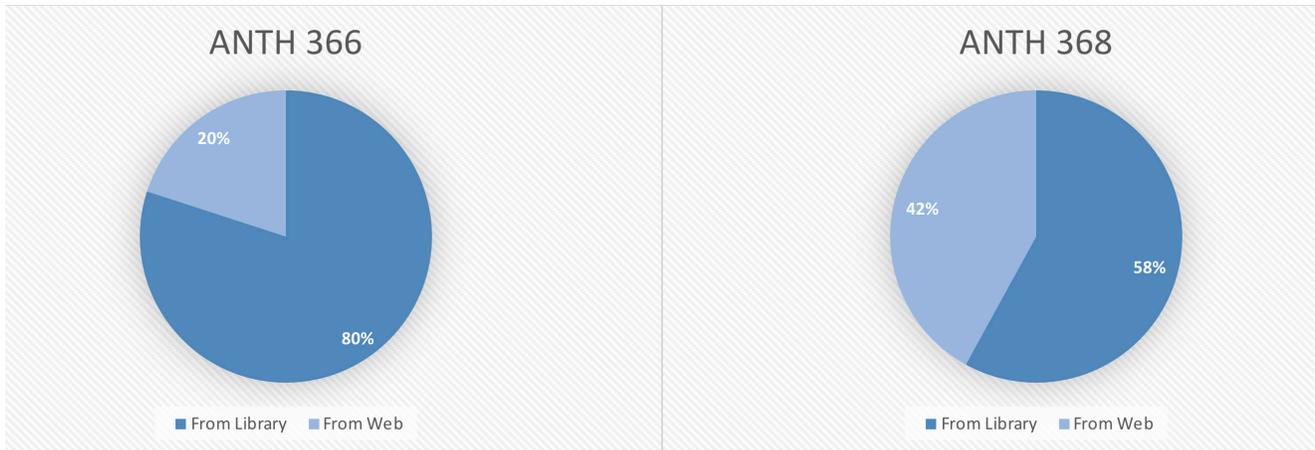
Figure 2: % Final Project Sources from the Library vs. the Web

Students seem to have inferred the scope and used it to look for sources for their final project instructions left them free to look for sources via whatever resource they chose. In ANTH 366, 12 of the 17 students used JSTOR in at least one of their citations. Of the 41 citations in ANTH 366, 26 (63.4%) came from JSTOR, 7 (17.1%) came from other library resources, and 8 (19.5%) came from the web at large. In ANTH 368, 15 of the 19 students used Elsevier and/or the web in at least one of their citations. Of the 33 citations in ANTH 368, 11 (33.3%) came from Elsevier, 14 (42.4%) came from the web, and 8 (24.2%) came from other library resources.

The final project instructions did state some limited source requirements, but students in both classes used them loosely. Students were directed to find an article "from PSU's library holdings" and use "the library's online search features" and "the library DIY guides to help locate an appropriate article" relevant to the focus of each class. Students were then to build "a kind of extended reading review" around this article

using references to support their work. The assignment mentioned only one parameter for finding supporting sources and that occurred at the very end where it asked, "Did you use library resources?" (see Appendices A and B). Students did not rely on the library "DIY guides," which would have directed them to the alphabetical list of 300 databases and which only mentioned one database by name: MLA International. Students used JSTOR or Elsevier, neither of which the DIY guides mention, and neither of which are on the first page of the alphabetical list of databases. It seems clear that students sought out particular databases, and what is revealing is that most students in ANTH 366 sought out JSTOR, while students in ANTH 368 sought out Elsevier. In the earlier reading review assignments, ANTH 366 links landed only in JSTOR. For ANTH 368, links landed primarily in Elsevier, as well as on one webpage, and in one PDF document with no search functionality displayed.

Rather than heed the DIY instructions to search broadly across databases or explore the

alphabetical list, students seem to have modeled their final project searches on the reading review assignments (see Figure 1). In further support of this idea, students' use of library sources versus websites also parallels the link landing pages of the reading review assignments. In ANTH 366, reading review links never landed students in a website, whereas in ANTH 368, one of the four reading review links landed students in a website. Echoing this distribution, students in ANTH 366 cited only 20% websites in their independent research while students in ANTH 368 cited 42% websites (see Figure 2).

It is worth noting that students did not return to the scope of all assignments, nor to the scope of all links in the reading review assignments. The final project described itself as "a kind of expanded reading review," (see Appendices A and B), which might explain why students in both classes returned to the scope of the reading review assignments and not that of other assignments. Another factor might be the relative weight of the assignments. The reading review assignments were worth 25 points each versus the discussions which were worth 10 points each. Students may have assumed that the reading reviews were more important, generally, because they were worth more points and thus returned to what they perceived as the more important scope.

What seems most significant, though, is that while students did return to the scope of the reading reviews, they returned only to the points in the assignments that provided obvious additional search functionality. The links that landed students in JSTOR and Elsevier all landed on

pages with the database name prominently displayed, a search box readily available, and other hyperlinked "recommended articles." None of the students used Academic Search Premier, the database that indexed the one PDF document linked in the ANTH 368 reading review assignments. The PDF document provided no obvious additional search functionality, and it gave no indication it lived in a larger context. Thus, it appears that the link landing page may provide some implicit ILI if a broader context, such as additional search functionality, is readily apparent.

In summary, this finding is important because it provides a level of nuanced detail about how students engage with assignments, the instructor's purview, and search scope. As Perruso (2016), and Head and Eisenberg (2009; 2010a; 2010b) found, students look to the purview of the course instructor for cues about where to search for sources, and this study adds to the literature that students do not weigh all aspects of the instructor's purview equally. Students in these asynchronous classes modeled some assignments more than others, and they returned to the databases the instructor had used in prior assignments but only the ones where the reading links landed within an obviously broader context. These details offer opportunities for embedding ILI in other asynchronous, online only courses.

## IMPLICATIONS FOR ONLINE INFORMATION LITERACY INSTRUCTION

While the study's surprise finding provides unexpected insight into how some students approach research in the absence of formal ILI, it

also serves to identify links as possible avenues through which to incorporate informal ILI into online curricula. Links are not just ways to direct students to content or track usage. They contain implicit ILI if strategically scaffolded into the curriculum. For example, what would have happened in ANTH 366 and ANTH 368 if all of the reading review assignment links landed in PDFs with limited-to-no additional search functionality? As appears to have happened in this study, the link landing page can expose students to new ideas and ways of seeing articles as part of a larger context (e.g., journal or database) that might provide additional search functionality and give them a means to find more sources.

Librarians can capitalize on the fact that students explore additional functionality when they encounter it as part of their coursework and that they model what they encounter. This awareness of the ways students engage with their coursework gives librarians specific types of situations to target in contexts where scaffolding smaller research skills steps, rather than delivering a one-shot session, is a productive means of delivering ILI. For example, librarians can think strategically about where links to readings land—what the landing page offers students in terms of potential search functionality and what it suggests about a larger context—when working to incorporate ILI into asynchronous, online-only courses.

Librarians and instructors also need to be strategic as they consider which assignments to target. The students in this study only modeled the scope of the reading reviews and not of the discussions, possibly because of the assignment name or the weight of the grade. In other words,

students do not appear to weigh all assignments under the instructor's purview equally. Thus, in the absence of formal ILI, whoever creates an assignment could use guiding language, such as "extended reading review," or give explicit instructions about the search scope they hope students will use. Librarians and instructors could also either grade ILI assignments or scaffold ILI into existing graded assignments.

## Implications for Collaboration

The ability of links to serve as tools for incorporating ILI into online-only curricula also provides opportunities for easy-to-implement, low-risk collaboration between librarians and teaching faculty. Using reading links to scaffold ILI into courses avoids many of the obstacles to collaboration identified in prior research (Mackey & Jacobson, 2005; Saunders, 2013; Yevelson-Shorsher & Bronstein, 2018). It does not require the instructor to completely reconstruct their curriculum; in fact, it does not require them to change their curriculum at all, which makes it relatively easy to implement.

Librarians can play an important role in educating teaching faculty about the potential significance of the link landing page. This is an opportunity to share with instructors the tendency of some students to rely on instructor purview in the absence of formal ILI, per the findings of this study and research by Head and Eisenberg (2009; 2010a; 2010b), and Yevelson-Shorsher and Bronstein (2018). It may be compelling to show teaching faculty how more deliberate choices of links that land in a broader context are

consistent with students' reliance on materials provided by instructors. It would not be time-intensive for instructors to change their course reading links and librarians could assist in determining the best link landing pages. Furthermore, these changes would not require teaching faculty to give up class time, or in the case of online courses, "real estate" in the course management system. Instead, these changes would allow for subtle, scaffolded ILI that seamlessly aligns with the existing curriculum. In situations where collaborative relationships with teaching faculty have been a challenge to establish, this could be an opportunity to begin to gain their trust with low-risk, easy-to-implement ILI. In the case of PSU, such collaboration led the Anthropology Department to collectively change its practice to providing students with links instead of full-text PDF files because of the implicit ILI work this study showed link landing pages can do. The collaboration also generally strengthened the relationship between the library and the Anthropology Department.

## Conclusions and Future Research

The findings examined in this case study provide a more detailed picture of how students engage with an instructor's purview, especially in an online-only class. These details can be useful for developing ILI, generally, but are particularly important as librarians consider how to best build it into asynchronous, online-only courses. Of specific relevance is that students seem to look to particular course assignments for guidance

on where to do their independent searching for sources, which makes it a strategic place to scaffold research skills instruction. Students also appear to explore the broader information landscape of assigned readings when the means by which they access the readings provides such context. More specifically, when instructors give students a link to an assigned reading, it can provide some ILI depending on where it lands.

Thus, faculty can provide reading links that land in the broader context (e.g., journal or database) rather than the full-text PDF. This makes it clear that there is more than just the full-text article available; students will notice, and even later make use of, obvious additional search functionality. In this way, students will implicitly become more aware of journals and databases as larger containers, which in turn reveals a larger scope of search possibilities. (Imagine the implications of taking this approach one step further: what would happen if the instructor gave students a citation instead of a link?) Not surprisingly, such scaffolding appears to be most effective in graded, more weighted, assignments. This echoes the experience of the instructor, Sterling, with the larger study, "ILI in Online-Only Courses: Which Approaches Work Best?" Sterling stated, "Graded library assignments carry the weight of being graded so students are more likely to participate thoughtfully. One of the most successful developments from our project was adding a graded library component to a reading essay." Librarians and teaching faculty could use such stepping-stones to scaffold research skills into assignments and expose online-only students,

who may never otherwise encounter the library, to the library's wealth of credible holdings.

Future research might explore other aspects of assignments librarians should consider when scaffolding ILI into curricula, online or otherwise. It would be helpful to delve further into what types of assignments provide better contexts for scaffolding and the granularity with which skills are best introduced. Furthermore, while the findings certainly suggested that students will not undertake a task unless it is required, the study did not definitively conclude that this was the case. Future studies would need to specifically test nuances of students' behavior around the types of assignments best suited to making students behave accountably and the weight of the grade necessary to induce such accountability. Finally, it would also be helpful to explore additional ways librarians and teaching faculty might collaborate to bring ILI expertise to situations, such as asynchronous online-only courses, in which active one-shot ILI sessions are not an option.

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