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Collaboration as Locus for Information Literacy Teacher **Knowledge Development**

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Abstract

Research on collaboration in information literacy curriculum has yielded insights into the opportunities and challenges surrounding efforts to establish sustainable teaching models. Few studies, however, have examined the ways in which these teaching partnerships enrich the knowledge base of instruction librarians and faculty. This paper examines the pedagogical knowledge development of two instructional librarians and one composition instructor in the collaborative teaching of information literacy skills in a composition course. The three instructors share ethnographic accounts recounting the iterative process of developing curriculum to meet the needs of their first-year students. The curricular innovations, including online modules, multiple instruction sessions, and student reflective journals, contributed to a richer knowledge base for the instructors as they managed the needs of their students. Through this collaborative process, they discovered gaps in their knowledge of learners and teaching methods.

Peer Reviewed Article

Collaboration as Locus for Information Literacy Teacher Knowledge Development

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Abstract

Research on collaboration in information literacy curriculum has yielded insights into the opportunities and challenges surrounding efforts to establish sustainable teaching models. Few studies, however, have examined the ways in which these teaching partnerships enrich the knowledge base of instruction librarians and faculty. This paper examines the pedagogical knowledge development of two instructional librarians and one composition instructor in the collaborative teaching of information literacy skills in a composition course. The three instructors share ethnographic accounts recounting the iterative process of developing curriculum to meet the needs of their first-year students. The curricular innovations, including online modules, multiple instruction sessions, and student reflective journals, contributed to a richer knowledge base for the instructors as they managed the needs of their students. Through this collaborative process, they discovered gaps in their knowledge of learners and teaching methods.

Introduction

As research into students' information literacy development has grown, so has research into the nature of curriculum development for these students. Previous research has investigated current and experimental models implemented by instruction librarians and faculty highlighting the acute need for diverse and flexible models in information literacy curriculum development. While this is welcome progress, institutional and disciplinary divisions continue to challenge ef-

forts to maintain sustainable information literacy programs. To combat these challenges, this article argues that a greater understanding of the nature of these collaborative efforts between instruction librarians and faculty is necessary. Specifically, this article seeks to identify how the knowledge infrastructure of instruction librarians and faculty changes throughout the course of collaboration with one another.

Understanding the dynamic nature of this knowledge infrastructure is important because it



can shed light on how to develop interdisciplinary programs, like information literacy instruction, when faced with the prevailing challenges to maintain such programs. Indeed, instruction librarians and discipline-specific faculty alike do not merely contribute their own expertise, but rather, they must develop some expertise in domains beyond their own areas. As such, their knowledge base often expands beyond the content expertise or subject-matter knowledge they contribute, further developing through the collaboration with instruction partners through program development. However, existing studies that have examined the nature of collaboration have primarily relied on more static models of shared expertise, failing to capture the more dynamic development of knowledge infrastructure inherent in the iterative process of collaboration.

This article addresses this gap by examining how the authors' knowledge infrastructure developed through the collaborative design and implementation of an information literacy module that includes (1) an expansion of the typical "one-shot" to a multi-session workshop format, (2) student reflective essays, and (3) "flipped" classroom exercises. The article then explores how the factors that ultimately shaped and further developed their knowledge infrastructure, comprised of —a knowledge of information literacy, the students, and the contexts within which they write and do research — providing a keener perspective on the opportunities and limitations of the authors' pedagogical approaches.

Literature Review

Challenges and Opportunities to Collaboration

Studies exploring students' research practices have highlighted the numerous obstacles facing instruction librarians and discipline-specific faculty in effectively implementing information literacy curriculum. Of these challenges, the "one-

shot" model has garnered much criticism despite – or perhaps because of – its persistence as a widely used model of information literacy instruction.2 As a single-session workshop, oneshots are criticized for their inability to engage students in sustained activities necessary to foster skill development.3 Its effects on collaboration are equally problematic as their inherent brevity often further limit the collaborative undertakings between librarians and faculty. Specifically, one-shots often place disproportionate burden on instruction librarians to both generalize their subject-matter knowledge whilst specifying their strategies onto discipline-specific contexts all within the often-unidirectional workshop.4

One way that practitioners and researchers have attempted to offset these challenges is by shifting basic information literacy skills engagement out of the classroom through online modules and flipped-classroom approaches. Online modules in particular are viewed as generally successful at improving students' information literacy when offered in subsequent semesters of their composition courses, suggesting that timing of pedagogical innovations is crucial in their successful implementation.⁵ Flipped classroom approaches, on the other hand, often include pre-session activities that guide students through information literacy skill training prior to a one-shot session. Studies assessing flipped classroom approaches, while reporting mixed outcomes, find that collaboration between instruction librarians and discipline specific faculty remains central to successful implementation of such innovations.6

These efforts echo a larger body of research advocating for greater interdisciplinarity and more situated programming built upon partnerships rather than earlier models where librarians, separated from the curricular conversation, deliver decontextualized skills to students.⁷ In doing so, such partnerships between libraries and writing



programs can help leverage often scarce resources and help build the networks necessary for sustainable programs. More sustained research and assessment, however, are needed in order to maintain these relationships and ensure further sustainability. 9

This existing research supports the crucial role that collaboration plays in the development of information literacy curriculum, and findings from these studies have greatly contributed to the field's understanding of effective methods for developing such curriculum. Missing from many of these explorations, however, is a clearer picture of how the knowledge infrastructures of instructors, both instruction librarians and discipline-specific faculty, have further developed through the process of collaboration. Witek and Spirito Dalgin offer a model of collaboration in which shared complementary expertise is the locus for programmatic development. 10 This article looks to build upon this model of "interconnected collaborative practices" by further examining how this shared expertise progresses beyond the individual contributor's domain and toward the development of a shared knowledge infrastructure. 11 By better understanding this knowledge infrastructure, instruction librarians and discipline-specific instructors can more effectively supplement their instruction methods when external constraints persist. To explore the nature of collaboration in information literacy instruction, this article argues that specifically examining the knowledge base of instructors across their collaborative process can afford keener insight into curriculum development and subsequently contribute to a more sustainable model of information literacy instruction.

Teacher Knowledge as a Conceptual Lens

To examine the knowledge infrastructure developed through this teaching partnership, this article relies on research from general education which explored the dynamic nature of teacher knowledge and subsequent iterations of this

framework in writing pedagogy research. When applied to information literacy instruction, this framework can provide greater insight into how pedagogy is developed to meet the changing needs of students while also shedding light on gaps in instructors' knowledge infrastructures including institutional impediments to its development.

Teachers' knowledge infrastructure has been conceptualized as a complex network of the knowledge of subject matter, curriculum, pedagogy, and students.12 Within information literacy, subject matter knowledge can be understood as a knowledge of how to locate and evaluate sources. This description of information literacy subject matter knowledge is precisely how oneshot models are often understood, as something brought to the classroom by instruction librarians. Knowledge of curriculum refers to an understanding of the broader goals and assessment criteria in the application of this subject matter knowledge. Within writing instruction, where much information literacy instruction is applied, curriculum knowledge often resides with the writing instructor in the implementation of information literacy as an element of course projects and more specifically, the canonical research paper. Knowledge of pedagogy refers to the instructional strategies employed to scaffold learning for students. Knowledge of students includes an understanding of who the students are, their existing knowledge and skills, and the potential challenges they may face with the curriculum and subject matter.

Although described separately, these dimensions should be seen as dynamically integrated components that overlap and mutually inform each other. ¹³ This may be best seen when examining how the ACRL *Framework* overlaps this teacher knowledge infrastructure (ACRL, *Framework for Information Literacy*). For example, the description of the second frame, "Information creation as a process," first offers a conceptualization of information (*subject matter knowledge*)



before moving onto describing how this knowledge is highly process-based and thus involves sustained engagement with sources (knowledge of pedagogy). The description further outlines prevailing knowledge and dispositions of learners (knowledge of students). Instructors' teacher knowledge infrastructure overlaps these components by bringing together context-specific pedagogical knowledge and broader knowledge of curriculum and students as they implement this frame into their coursework.

Yet the primary barrier to more successful information literacy curriculum development lies in prevailing approaches that rely more heavily on instruction librarians' subject-matter knowledge in isolation of — rather than in concert with — other knowledge domains, such as knowledge of students. This article argues that by instead examining how these other dimensions of an instructor's knowledge infrastructure develop through collaboration, a more sustainable model of information literacy instruction is achieved.

Collaborating to Teach Information Literacy

Context

Wentworth Institute of Technology is an urban, masters granting STEM-focused university. Wentworth students take two semesters of English courses which serve as prerequisites to their humanities and social science electives required to graduate. This discussion focuses on two sections of English I, the first of the two-semester required English sequence. While specific topics for the English I courses are decided by the instructor, the overall goals of this course are similar to other US first-year composition courses as outlined by the Writing Programs Administration Outcomes Statement and focus on developing students' academic writing skills through sustained engagement with drafted writing projects, academic readings, and information literacy. 14 The topic for these two specific sections is

social identity and throughout the course, students are assigned readings that explore the notions of identity as a social construct.

For these sections of English I, students write three multi-draft essays, with the final essay being a research project that targeted information literacy skill development. Students were free to focus on any topic of social identity for the final project. The research project spanned an eightweek unit beginning with brainstorming and idea development and lasted until the end of the spring semester. Additional scaffolded assignments divided the remaining research writing into parts in order to provide students with different levels of support to meet their individual needs.

Planning and Implementation

To better understand the nature of collaboration, two stages of work - planning and implementation—are analyzed below. It should be noted that while these stages suggest a linear progression, real collaboration rarely proceeds in clearly delineated stages. This collaboration stemmed from previous work between the instruction librarians and composition instructor. The composition instructor previously relied on one-shot workshops as a means of introducing library resources and admittedly assumed that one-shots were the preferred method, based on how other courses engaged with library resources. Similarly, the instruction librarians assumed discipline faculty preferred as minimal disruption to their course as possible. Throughout the previous semesters working together, however, the composition instructor and the instruction librarians shared their interests in implementing more robust information literacy instruction.

In addition, the implementation process was itself iterative and involved additional meetings to plan and re-plan as the librarian and composition instructors evaluated the students' engagement with the targeted information literacy



skills. By examining the stages in the process, a clearer analysis of how collaboration broadened the instructors' teacher knowledge infrastructure can be reached.

Planning. As discussed above, the information literacy unit began in the second half of the spring semester and incorporated three areas of innovation: (1) library instruction sessions, (2) online modules, (3) reflective journals. Planning for this collaboration started in the prior fall semester in which the instruction librarians and composition instructor met frequently to discuss course goals and unit plans.

In the fall semester, the library had acquired online information literacy modules providing an opportunity to expand its information literacy instruction offerings. These modules engaged students in topics on information literacy skills through online readings, interactive videos, and quizzes. The instruction librarians and composition instructor met to evaluate the slate of available online modules and agreed to assign three modules that focused specifically on: sources of information, searching for information, and evaluating information. In reaching this decision, the instruction librarians shared their understanding of the foundational skills of information literacy needed to build students' understanding. This work coupled well with the composition instructor's pragmatic understanding of the students, the potential challenge of maintaining student engagement across multiple online modules, and the time limitations for balancing information literacy instruction with writing instruction.

The online information literacy modules also provided opportunities for a second innovation: more robust library instruction sessions. Acknowledging the perennial challenges posed by the one-shot model, multiple sessions of teamteaching was first considered as worthwhile option. The instruction librarians pointed out that, despite best efforts, one-shots will persist, and

any innovation must provide workable solutions despite underlying constraints. A multisession unit is not always replicable nor feasible in other contexts. As such, the three decided on two co-taught library sessions. Throughout the other class sessions during the source-based project unit, the composition instructor reinforced the information literacy concepts while focusing more heavily on the drafting process.

In order to prepare for these team-taught sessions, the composition instructor shared materials from the writing course to provide greater context for the students' research project thus allowing the instruction librarians to more seamlessly integrate their expertise in information literacy within the situated learning of the students. To do this, they met to discuss the flow of the overall course and explore the course topic on social identity. Planning for these library instructions continued into the spring semester, as the composition instructor regularly informed the instruction librarians of the progress of the course, students' overall strengths and weaknesses, and their engagement with the course topic. This allowed for further fine tuning of their lessons to meet the needs of the students. This collaboration is in contrast to the common division-of-labor model in which instruction librarians were separate from the classroom. Instead, all three instructors shared their knowledge of the curriculum and pedagogy, acknowledging this knowledge as key components to developing teacher knowledge infrastructure. They worked together to set the pace of the unit and schedule the information literacy tasks.

Together with these two innovations, the three next considered different ways of assessing students' learning and engagement. While instruction sessions often relied on student evaluation surveys, the composition course already had a weekly reflection component in which students reflected on their readings or writing skills progress. As such, reflective journals that built upon



the previous reflective writing tasks were incorporated to assess students' engagement with information literacy skill development. Reflection prompts during this unit are based in part on the journal prompts used in Insua et al.'s study asking students to reflect on their information literacy engagement over the course of the project spanning five reflection journal entries (see Appendix for journal prompts). ¹⁵ IRB approval was obtained to analyze students' journal entries.

Implementation. Based on the earlier planning, it was decided that students would complete their first reflective journal entry and three information literacy modules prior to the first library instruction session. In the first reflection, students were asked to consider their previous experiences with libraries in general and with writing source-based papers. Meanwhile, the three information literacy modules helped better prepare the students for the rest of the unit. The modules, although often general and decontextualized, provided students with a baseline of information literacy vocabulary upon which could further build skills could be applied in the library sessions.

In their journal entries, most students shared their experience writing research papers in high school, with many admitting the tasks to be overwhelming and often anxiety-provoking. With regard to the library, many students candidly reported an aversion to libraries in general, orienting toward them as physical spaces they rarely visited. Many further described their difficulties using library databases, sharing their preference for Google as a search engine for finding sources.

The instruction librarians and composition instructor met to share the responses from the students' first reflective journal so as to better inform the upcoming lesson allowing for any plan revisions. This greater knowledge of students, an important component of the teacher knowledge infrastructure was particularly important for the instruction librarians and is often missing component when instruction librarians enter the classroom "cold" — without prior working knowledge of student classroom dynamics.

As the instruction librarians and composition instructor worked together to better understand the students' needs, they continued to adapt their lesson plans throughout the research unit. The students' responses, for example, reinforced the decision to conduct the instruction sessions in the regular classroom instead of having the students go to the library where information sessions were usually held. While seemingly a minor change, this decision helped mitigate some of the students' apprehensions by recontextualizing the library beyond the physical spaces they described. Moreover, it created greater cohesion across the lessons within the unit. The library information sessions were not "different" from regular class, as signaled by being in a different space; rather, they were another day in the regular course.

The two library sessions involved the instruction librarians leading the class through a series of information literacy activities. During these two sessions, the librarians assumed instructor roles, while the composition instructor maintained a more facilitative role. The bulk of their first session focused on comparing Google, Google Scholar, and library databases. With social identity as the umbrella topic for this research paper, the librarians focused their activities on the topic of millennials for student searches. Students were divided into six groups and asked to navigate Google, Google Scholar, and the library database and report their findings. By comparing the three databases, the librarians were able to move beyond merely locating sources and toward evaluating sources, a more challenging skill for first-year students and one that instruction librarians often have less time for in a traditional one-shot. The librarians did this while building



upon students' background knowledge and previous conceptions of Google as a useful search engine. Lastly, and perhaps most importantly, the librarians built a rapport with the students while learning individual classroom dynamics. They ended the session by asking the students to find five sources for their paper in preparation for the second session.

The second session came two weeks after the first session. The librarians asked students to share their sources and, as a class, they discussed the relevance and credibility of the respective sources. Several students admitted still relying on Google despite credibility concerns. This led to an opportunity to discuss search strategies and the usefulness of Google as a launching point for finding more scholarly and credible sources. This discussion expanded upon key word search pitfalls, an area that was touched upon in the online modules but remained difficult to operationalize for the students. In doing so, abstract information literacy knowledge thus became contextualized into skills that were more easily applicable. This is an important step to articulate for students considering the challenges they often face in transferring knowledge from abstract ideas they learn in a textbook (or online module) into skills they can use. By subsequently discussing their processes, students moved toward stabilizing their skills, fostering greater metacognitive awareness of strategies they could implement as they iterate these same steps to find and incorporate additional sources.

Limitations to the above implementation did exist. Alone, the online modules remained decontextualized. The students, while reporting that they valued the modules, also admitted in their reflection journal entries that the modules were boring or that they found themselves glossing over the information. As such, the online modules were valuable not for their use alone, but for their ability to set the stage for further discussions, learning more about the students, and

subsequently contextualizing the information literacy skills.

In addition, reflective journals, while providing initial insight into students' research behavior, were not a robust enough assessment tool of students' engagement with the information literacy skills necessary for successful research writing. Perhaps a problem acute to the implementation of the journals in this curriculum, the journals were often seen as an additional writing task, as they had been part of previously ongoing reflection writing assignments. Students more often wrote cursory responses acknowledging benefits from the activities that did not always translate into their writing.

Despite these limitations within the individual interventions, taken as a whole, the interventions contributed to students' learning through a more sustained and embedded information literacy experience. This resulted in more focused research papers and a greater engagement with source work.

Discussion: Teacher Knowledge Infrastructure Development

Developing sustainable information literacy programs can be a challenge for many campuses. Collaboration between instruction librarians and discipline-specific faculty is an important step toward addressing many of the persistent challenges. This article argues that these collaborative efforts can be more closely analyzed by examining the development of instruction librarian and faculty knowledge base. Specifically, by examining how the knowledge of students, curriculum and pedagogy, and subject matter moved beyond individually shared realms of expertise, a greater understanding of the benefits of collaboration can be reached.

The collaborators' knowledge of students was enriched through the reflective journals and the more focused engagement in the classroom. The



reflective journals allowed the instructors to better understand students' preexisting conceptions of working with the library. Students described research habits that were similar to those reported in other studies, namely a reliance on Google, complaints of database usability, and challenges with source credibility. 16 However, by confirming these findings, the collaborators could localize curriculum to address the very challenges students articulated. In addition, by having students complete the online information literacy modules prior to the library sessions, class emphasis shifted from teacher-focused instruction to greater student engagement. This engagement positively affected the ability to craft curriculum suited to these students by simply having more time to work with them. In this way, knowledge of students and curriculum, were mutually enhanced through focused engagement and greater insight into the students.

This interplay between knowledge of curriculum and students resulted in a more situated knowledge of pedagogy as more targeted activities were developed that addressed the specific challenges students were facing at the moment they faced them. In other words, by having two library sessions, students' learning was more effectively scaffolded by providing them with the right support at crucial stages of the research and writing process. This is in contrast to the one-shot model which often assumes students will be able to absorb the requisite information literacy skills at the onset of a project and later transfer these skills throughout their research process.¹⁷ Instead, by operationalizing these informational literacy skills into the specific writing contexts within which the students were working, the librarians enacted their subjectmatter knowledge together with students affording additional opportunities to move toward a more "situated, process-oriented literacy."18

From this more robust knowledge infrastructure, an additional by-product emerged: authority. Traditionally, teacher authority is derived from subject-matter knowledge, the composition instructor's in writing instruction and the librarians' in library instruction. However, the librarians felt that they were able to move beyond their role as "purely librarian" and toward an opportunity to occupy the instructor role more fully. This transition began with shared curriculum planning and was further marked by the librarians' own development of lesson plans, management of curriculum, and ability to assign homework at the end of the first session. The students were held accountable for homework and as such, the librarians were able to engage with the students on a different level.

Thus described, the expertise brought by each collaborator to the project was not just simply shared in collaboration. Rather, the instruction librarians and composition instructor worked together to build a unit through which each collaborator pushed their knowledge infrastructure forward. This is perhaps best exemplified in how the roles between the instruction librarians and composition faculty began to overlap, with instruction librarians building rapport with students, assigning homework and leading lessons. Doing this required not only an understanding of the writing curriculum as shared by the composition instructor, but instead the collaborative development of the curriculum to include information literacy.

Implications: Teacher Knowledge Infrastructure and the One-Shot

Because library information sessions remain one of the singular means through which students engage with library resources and information literacy instruction, it is important to consider the implications of these interventions on future incorporation of library sessions. Using the teacher knowledge infrastructure framework can help identify what conditions are necessary



to foster richer information literacy curriculum despite institutional constraints that may exist.

Teacher knowledge is the dynamic interplay of subject-matter, curricular, pedagogical, and student knowledge. As described above, the knowledge of students affected how the curriculum was adapted and implemented, a knowledge that is informed not only by the existing research but by the students' voices via their written reflections and classroom interactions. This further enriched pedagogical knowledge, informing assignment selection as well as how the classroom space was managed to optimize learning. Throughout the library instruction sessions, subject-matter knowledge in information literacy and writing skills were operationalized and contextualized together within the specific contexts of students' ongoing work and as such mutually informed by the other knowledge components.

Supplementing student learning to better contextualize skill. The one-shot model relies on a decontextualized subject-matter knowledge of information literacy. Instruction librarians are experts in their knowledge of information literacy and library resources, but this knowledge remains uninformed by any specific knowledge of students, curriculum, or pedagogy as it could pertain to the classrooms they are called to enter. Because these components are interrelated, however, all three of the interventions described in this article may not be necessary to activate a richer knowledge base. Rather, by supplementing the library session with pre- and post-activities, instruction librarians can benefit from a richer knowledge base from which to conduct library session. As such, this article argues that enriching this knowledge infrastructure improves library information sessions; by providing instruction librarians with a stronger knowledge infrastructure that is situated within the specific classrooms within which they will be teaching, they can then better contextualize

the target skills and more effectively foster students' development of information literacy skills through more informed process-based methods.

Accessing students' pre-existing knowledge. Learning is most successful when instructors are able to build upon students' pre-existing understanding of the material. Moreover, by understanding any biases or misconceptions, instructors can better craft their lessons to target gaps in this understanding. While reflective journals can achieve this purpose, pre-class questionnaires may also be able to elicit this information, affording instructors opportunities to enrich their knowledge of students. Students also benefit from these different input modalities by helping activate their knowledge infrastructure and orienting their future learning through these kinds of pre-learning activities.

Learning about any affective relationships that students may have toward the library and the writing tasks is also important in curriculum development and can be addressed through preclass questionnaires. As Colón-Aguirre and Fleming-May argued, students carry various emotions toward working with the library, often resulting in avoidance. ¹⁹ Writing research papers can further exacerbate such problems and invoke anxiety surrounding the research task. Instruction librarians help mitigate these challenges by making concerted efforts at building rapport with the students while crafting lessons that foster shared learning across the class.

Developing curricular and pedagogical knowledge. While subject-matter knowledge can be tailored to meet the specific needs of students, provided opportunities to learn these needs are available, this knowledge must be contextualized within the work that students are doing. As such, it is important to consider how these information literacy tasks will be situated within the broader curriculum of the respective course. This may involve collaboration, additional planning, and further research for instruction librarians on



pedagogical methods relevant to the particular discipline-specific courses.

Curricular and pedagogical knowledge can also be achieved by merely allowing more time in the classroom for sustained engagement in which librarians work with students on their tasks. Online modules such as the ones described above can offset the burden of knowledge dissemination and shift the focus toward a more interactive workshop model wherein activities are built to showcase and explore students developing information literacy skills.

Conclusion

To some degree, the process described above represents the work of three specific collaborators, and as such, can suggest results that escape replicability. However, by considering teacher knowledge as a framework for understanding the opportunities available in collaboration, this article helps identify more manageable ways to modify involvement when partnerships are less than ideal.

While these opportunities for a more enriched teacher knowledge infrastructure are promising, the authors also acknowledge that institutionally defined identities and disciplinary roles play an important part in determining the contexts for curriculum development. As Norgaard and Sinkinson argue, the primary challenges to sustained efforts at information literacy curriculum are often rooted in historical and structural disciplinary divides in the academy. Norgaard and Sinkinson point to the persistent struggle for librarians to be viewed as educators.

Nevertheless, the efforts described above contain a foundation for other types of faculty-librarian collaboration. As both parties are asked to adapt to each other's knowledge infrastructures, the necessary collaboration helps bridge gaps across institutional divides and can help facilitate a richer information literacy environment



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²⁰ Norgaard and Sinkinson, "Writing Information Literacy: A Retrospective and a Look Ahead," 17.



¹⁸ Rolf Norgaard, "Writing Information Literacy: Contributions to a Concept," *Reference & User* Services Quarterly 43, no. 2 (Winter 2003): 125.

¹⁹ Colón-Aguirre and Fleming-May, "'You Just Type in What You Are Looking For': Undergraduates' Use of Library Resources vs. Wikipedia," 395.