

## **Examining the Teaching Needs of Engineering Faculty: How the Library and Librarian Fit In**

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## **Abstract**

Teaching is a common responsibility among many subject librarians [1], as is supporting faculty in their own teaching pursuits [2]. However, what this support looks like can vary greatly depending on the academic area, the course, or the specific faculty member. This study aimed to understand the needs of engineering faculty members, especially those who had not worked directly with the engineering librarian for library resource instruction. The study was modeled after a similar multi-site study conceived and organized by Ithaka S+R, a not-for-profit organization that provides guidance and support for academic and cultural communities, that explored the teaching needs of business faculty members [3]. Interviews were conducted with faculty members from the departments of Mechanical & Aerospace Engineering and Industrial & Systems Engineering in the summer of 2020. This paper examines the main teaching themes that emanated from the analysis of the interview transcripts: course materials needed and created by engineering faculty, how library research skills are introduced to engineering students, and how COVID-19 impacted the way engineering faculty approached course preparation for the fall 2020 semester. Recommendations for additional research and future faculty outreach are also prescribed.

## **Introduction**

The academic liaison librarian (or subject librarian) wears many hats. One of those hats typically involves instruction, teaching students about the available library research resources and how to use them [1, 4]. If these instruction sessions are course-integrated, it is customary that they are at the request of the faculty or professor teaching the course and are also usually a one-off event, in the author's experience. Librarians may also interact with teaching faculty if they require specific library resources or materials for a course, such as a specific text on library course reserve, or a particular article made available through a library database.

As the liaison librarian to the School of Engineering and Applied Sciences (SEAS) at the University at Buffalo (UB), the author deals with these multiple aspects of the position frequently. However SEAS has more than 200 faculty [5], and only a fraction of those faculty members request the engineering librarian to provide course-integrated instruction and other teaching-related requests. This led the author to wonder what are the teaching needs of the faculty that do not typically interact with the librarian, even if those needs do not appear to directly relate to the library.

In 2018, UB was one of fourteen U.S. academic institutions that participated in the Ithaka S+R-led multi-site research study investigating the teaching practices of faculty providing undergraduate level instruction in business. The author was the sole researcher from UB and provided de-identified interview transcripts to Ithaka S+R for their self-published report, "Teaching Business: Looking at the Support Needs of Instructors [3]." Findings specific to UB were provided in the non-peer-reviewed report, "Examining the Undergraduate Teaching

Practices of Faculty in the School of Management,” and made available on the UB institutional repository (UBIR).

The study of UB business school faculty provided some wonderful insights about how they taught their courses and where the library could fit into that picture. However, as the author serves as the liaison to engineering, not business, a similar study with engineering faculty at UB was planned. Since every interview conducted with business faculty had been a brand new acquaintance, the author aimed to interview engineering faculty who had never requested a library resources guest lecture in their classes. This study intended to better understand how the library and the engineering librarian, the author of this paper, could better support faculty in their teaching, even if library resource instruction was not a direct part of the course.

## **Literature Review**

Exploring how engineering faculty utilize the library has been studied for decades [6-11]. Kannapanavar and Manjunatha, as well as Hiller, investigated how faculty accessed library resources and materials as well as their satisfaction with the library and its services [7, 8]. Korobili, et al. went a step further by studying factors that influence the use of library resources by faculty. The study found that the use of electronic resources increased as perceived usefulness by faculty members increased [9]. Mulla also focused on the use of electronic resources by engineering faculty and included “teaching” as a purpose why one would access library e-resources [10]. Carlson, et al. surveyed both faculty and students to determine data information literacy needs specifically, and what this meant for the library [6]. Zhang also examined the library use patterns and information-seeking habits of faculty, finding that there were some resources that faculty regarded more highly than librarians, interestingly [11]. The takeaway from many of these studies typically boiled down to increased outreach and better marketing of library resources, including LibGuides, featuring subject-specific resources.

As each institution is different and as such, the research and teaching needs of faculty differ, this topic will certainly continue to be explored indefinitely. However, an important factor that came up in this study, which is still in its infancy in terms of research, is how the global COVID-19 pandemic has affected the teaching needs and experiences of faculty. Librarians and other researchers have wasted little time in diving into this topic area, though. Koscieljew examined the initial international responses to COVID-19 from a library perspective [12]. The in-depth study reviewed statements from professional library associations, as well as individual libraries from all over the world. Fasaie, Adekoya, and Adegilero-Iwari studied how academic libraries in Nigeria responded to COVID-19, including altering library hours, enacting security and social distancing measures, and determining how library materials were accessed during the pandemic [13].

Ali and Gatiti studied the role of librarians in Pakistan during COVID-19 [14]. They also included a glimpse into the rapidly growing literature on COVID-19 available to their patrons from a variety of databases. Ultimately, they concluded, the role of the librarian was three-fold: to support public health awareness, support researchers and faculty, and provide routine core services to library users. Sukula, et al. took a broader perspective by conducting a literature

review of the status of libraries from 2001-2020 [15]. Based on that review, the authors also looked to the future to determine how libraries will continue to meet the information needs in a post-COVID-19 higher education environment. Martzoukou authored a viewpoint paper to examine the renewed mission for digital information literacy many academic librarians were facing due to COVID-19 [16]. It provides some initial thoughts regarding the challenges and opportunities for academic librarians in a post-COVID environment.

Considering the swift switch to virtual learning, many researchers have also begun to examine how COVID-19 has impacted teaching, with more scholarship being published every month. Crawford, et al. took a global approach and studied the “first wave” of responses from higher education institutions internationally by reviewing information from government sources and major media outlets such as CNN [17]. Bao took a case study approach from Peking University to look at online educational practices [18]. The paper intended to provide colleagues from other universities with instructional strategies that could be implemented at their own institutions. Karalis and Raikou also examined teaching during COVID times looking specifically at the “instant effects” of COVID-19 on university education during the first two months of the pandemic in Greece [19]. Like Bao, Karalis and Raikou focused on the necessity to continually evolve educational practices to meet the needs of the students.

Jagadesh Kumar looked at how institutions, teachers, and students in India made the shift to online education, with a specific focus on technology [20]. The author focused on how well India could and should adapt to online learning because of its large repository of digital resources, an ever-expanding communication network that is working to provide broadband internet access to even the most rural parts of India by 2022, and the technology expertise of their teachers and faculty.

Zhu and Liu looked at teaching during COVID at Beijing Normal University in China but also looked to long-term visions [21]. They stated that there should be continued focus and development on open educational platforms and that additional training is needed for teachers and faculty to provide the best quality online education. Toquero also looked to the future of higher education in a post-COVID world, on how to “strengthen practices in the curriculum and make it more responsive to the learning needs of the students even beyond the conventional classroom” [22]. It is interesting yet perhaps not entirely surprising that much of the COVID-19 scholarship focused on both academic libraries and higher education in general, come from international sources since not many US-based studies are available yet. It can be assumed that given the impact of COVID-19 in the US, these studies are forthcoming, though.

Surveys are a common mechanism for librarians to elicit feedback from faculty [23], but interviewing faculty is less common. As mentioned earlier, the author participated in a semi-structured interview-based study with business faculty in 2018, led by Ithaka S+R. Ithaka S+R has conducted many other similar studies that relied on faculty interviews, but those studies focused on faculty research needs, as opposed to teaching needs [24-32]. Rascoe and Li continued the study of engineering faculty research needs by interviewing aerospace engineering faculty following their participation in the Ithaka study focused on civil and environmental engineering faculty [33]. Pawley also interviewed engineering faculty, not concerning teaching or research, but rather how they defined “engineering” [34]. Zhu interviewed engineering faculty

as well as business faculty, focusing on the importance of writing as well as how faculty teach writing [35]. Therefore, the study outlined in this paper is noteworthy as it focuses on engineering faculty teaching needs from a library perspective, which has not been explored previously to the best of the author's knowledge.

## **Methodology**

This study was focused on interviewing engineering faculty regarding their teaching needs, specifically those who had never requested a course-integrated instruction or a guest lecture from the engineering librarian on library resources. Considering SEAS is a large school with nine departments [5], the potential pool of candidates was further narrowed to the Department of Mechanical and Aerospace Engineering (MAE) and the Department of Industrial and Systems Engineering (ISE). This was done because both departments have a large faculty list in comparison to other departments, and of those faculty members, a small percentage had a history of requesting library resource instruction.

The study was approved by the UB Institutional Review Board (IRB) on April 20, 2020, with interviews conducted during the summer of 2020. Interview candidates were recruited via personal emails (Appendix A), after obtaining permission from the Dean of SEAS and the appropriate department chairs. Fifteen faculty members met the criteria of never having requested course-integrated instruction from ISE out of twenty-one total faculty, and twenty-one from MAE out of forty total faculty. Seven faculty members agreed to interviews, with four from MAE and three from ISE. However, one faculty from MAE had to unexpectedly withdraw before the interview took place. Faculty from all levels - from Assistant Professor to Distinguished Professor - were invited to participate. In the end, all faculty levels participated in the study, except for "Distinguished Professor."

Due to the COVID-19 pandemic, interviews were all conducted virtually via Zoom. Interviews were recorded for the sole purpose of extracting the automatic conference call transcript. Once the transcripts were cleaned up for readability and personally-identifying information of the interviewees was removed, the recordings were deleted. Since the author acted as the sole researcher on this study, no other person was able to access or view these recordings. All interviewees digitally signed a consent form following UB IRB policy.

The semi-structured interviews lasted between 45 and 60 minutes; no follow-up questions were given to interview participants after the interview session. The interview questions themselves (Appendix B) were modeled after the questions used during the Ithaca S+R study on teaching business. There were some key differences, however. The Ithaca study had a significant number of questions that focused on working with tools, such as tools to support teaching (i.e., clickers or smart boards), as well as tools related to analytics for faculty to better understand and improve their teaching (i.e., analytics provided through a learning management system). This study did not include these questions. However, this study did include questions related to the COVID-19 pandemic as the interviews were conducted shortly after the conclusion of the spring 2020 semester when classes swiftly moved to an online format. Faculty were also preparing for the fall 2020 semester, as it had been announced that many courses at UB would be conducted virtually

again. All classes at UB, even those starting in person, would move to an online format following the U.S. Thanksgiving holiday in November.

The semi-structured interview style was ideal for this study as it allowed for more relaxed conversation and narrative from the interviewees. It also allowed the author to ask occasional custom questions or follow-up questions based on the answers given. This proved to be beneficial since the faculty interviewed taught different courses and had different amounts of experience in teaching throughout their careers.

After interview transcripts were de-identified, they were then manually coded and analyzed, which was determined to be the most efficient path due to the small number of interview participants.<sup>1</sup> The data in this study were analyzed only by the author. Broad codes were assigned during the first read-through of all interview transcripts. Additional codes were then added and defined upon the second and third readings (Appendix C). Codes largely followed the main areas of questioning from the semi-structured interview guide. A combined approach of deductive and inductive reasoning was utilized by the author. Some existing theories on how the faculty would respond were based upon the previous Ithaca S+R-led study. This included how faculty would respond when asked about preparation for their courses; the author assumed faculty in engineering spent a large amount of time creating materials and resources for their courses. From an inductive reasoning approach, there is scant literature regarding the shift in teaching practices due to COVID-19. Therefore, the author did not have existing theories regarding anything related to the impacts of COVID before the interviews were conducted.

As the results section will detail, the major themes that emerged coincided with these codes, however, it's the specific details of what each faculty member shared that provide the most insight into their teaching needs.

## **Results and Discussion**

Following the coding of the interview transcripts, the analysis revealed several core themes that emerged regarding the teaching needs of engineering faculty. These themes are: electronic access to materials and resources, student literature research skills, and the impact of the COVID-19 pandemic on instruction. Each of the themes are expanded upon in the following subsections.

### *Electronic Access to Materials and Resources*

Access to materials and resources was something all faculty spoke on, specifically electronic access to these materials given the move to online learning. The topic of electronic access to resources was a discussion the author had with faculty fairly frequently even before COVID-19. Due to COVID-19 and the online learning environment the pandemic created, the idea of

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<sup>1</sup> The author previously attended a two day workshop led by Ithaca S+R in relation to the research study with business faculty. This workshop included training on conducting interviews, as well as manually coding and analyzing interview transcripts. Therefore the author felt prepared in terms of conducting this second, similar study.

electronic access to library materials and resources has now also become an issue of equity. As one faculty member stated: “finding a way of providing access to books for students that are underserved, I think that’s important, especially textbooks. I think that’s critical for students who cannot afford buying the required materials [for class].”

Before COVID, placing required course materials on library course reserve was a way faculty could address issues regarding access, especially when the cost of those materials was a concern. However after March 2020, without physical access to these materials, the library faculty and staff were left with the dilemma of how to make these print materials accessible to students for the remainder of the semester, while adhering to copyright restrictions. It should be noted that these interviews were conducted before the UB Libraries released information regarding how print course reserve materials were to be handled for the Fall 2020 semester. However, regardless of course reserve access, many faculty mentioned that they viewed the role of libraries changing because of COVID to focus more on providing electronic access to required course texts and supplementary materials. As one faculty member said, “I know the Libraries have already been providing a lot of electronic access [to materials], but it is because of COVID that that really needs to become a priority going forward.”

In relation to other course materials, meaning any materials created or selected for use by the faculty, faculty shared that they created large amounts of content for their students. This included but was not limited to lecture notes and/or presentation slides for each lecture, homework and assignments, tests and quizzes, and case studies. A few faculty mentioned creating their own textbook to be used in their courses as well. The creation of course materials only increased with the COVID-related shutdown. Faculty detailed posting full lecture notes on Blackboard, the UB learning management system for students to easily access especially if they were having issues accessing synchronous class meetings or even asynchronous videos. In preparation for the fall semester, several faculty mentioned a hybrid or “hy-flex” approach to their courses, by planning to meet synchronously via Zoom once per week, with one or two weekly recorded lectures as well. Although it was summer, these faculty members were already in the process of recording lectures in order to be ahead of schedule. This decision was in direct response to how the Spring 2020 term transpired, with many of the faculty feeling rushed or unprepared with recording lectures to post online for students.

While these course materials are not library-specific resources, it ties into the theme of electronic access to resources as many faculty remarked how they plan to continue to do some of these things going forward, even in a post-COVID-19 world. As one stated, “I’ve received so much positive feedback from students by making these [more in-depth] lecture notes available, why would I stop? I think it just makes sense to keep doing it.” Faculty were quick to mention that they make them available via Box, the current campus cloud file storage and sharing platform, so they can maintain at least some control of these materials by knowing who is allowed to access them.

### *Student Literature Research Skills*

As mentioned, the author specifically focused this study on faculty who had not previously requested course-integrated library instruction for their classes. It is understood that not all

engineering courses require an overview of library resources. For this study though, a deeper understanding of how faculty think about how their students conduct library research and their ability to assess the quality of information was discussed. Many of the faculty responses confirmed that in the classes they teach at the undergraduate level scholarly research is not an integral part of the course. In some cases, faculty stated they do not have their students search for information or resources concerning an assignment, but rather gave it to them directly or showed them exactly how to access it, such as a specific technical standard, for example.

Another common response from the faculty members interviewed was acknowledging that undergraduate students do not read their textbooks and that they are often asked to do a great deal of work for each of their classes. One faculty member specifically stated that they “pull back” quite a bit on homework and assignments that require literature research to avoid working the students too hard in that particular area. Another acknowledged that those skills were specifically addressed in other classes and therefore became a lower priority in the course they taught.

Yet one faculty member mentioned that they “absolutely” teach their students about various information sources, such as the U.S. Bureau of Labor statistics or anthropometric data, how to find those sources and why they are important. Another stated, “it is important for them to understand the difference between just searching the web and going into a more reliable source.” The same faculty went on to state that these skills were not just important in academia, but also for engineering professionals including how to “plan for [a search], how to conduct it, and to narrow [the results].” Therefore, while there was no universal consensus on how student literature research skills were addressed at the undergraduate level this could certainly be attributed to the different learning outcomes of the courses these particular faculty members teach.

While literature research was largely not part of the undergraduate courses these faculty teach, the inverse was true for graduate-level courses, where literature research was a large portion of the class. In these cases, faculty acknowledge they took on the role of providing guidance and instruction on searching skills. Faculty mentioned covering subtopics in this area such as what resources are preferable to search, what is considered a highly cited paper in the field, and what is acceptable to cite in terms of sources. It was noted by one faculty that a standalone research methods course was not offered in their department for graduate students, which they viewed as a “deficiency.” A different faculty member admitted, “I don’t know why I don’t ask you [the engineering librarian] to come [to class to speak] now that I think about it.” Another stated that while they do require scholarly research and literature reviews in their graduate courses, they do not discuss assessing the quality of the references the students find.

### *The Impact of COVID-19 on the Teaching Needs of Engineering Faculty*

Beyond electronic access to library materials and resources, the COVID-19 pandemic has impacted faculty teaching in numerous ways that led to it being a standalone theme. The timing of the interviews, as previously stated was during the summer of 2020, turned out to be quite interesting as faculty were in the middle of planning for their courses in the fall. After just completing the swift shift to online learning for Spring 2020, the faculty had some additional



unique experiences and thoughts they shared that all tied back to how COVID had impacted and was continuing to impact their teaching needs. All faculty members that participated in interviews indicated they planned to teach their courses virtually in the fall, except for one faculty member who hoped to be able to secure a classroom for one small graduate course of about twelve students.

When discussing their preparation for the Fall 2020 semester, faculty mentioned spending the summer recording videos of lectures to have ready for their students, as some were planning to have their courses be almost completely asynchronous, or a mix between synchronous and asynchronous learning. Since many faculty made these videos quickly for the Spring 2020 semester, as previously mentioned, they wanted to get ahead of making them for fall to improve the content and experience for the students. A faculty member also mentioned spending quite a bit of time over the summer brainstorming how to translate experiential learning experiences to the online learning environment, since these experiences were an integral part of the course. Another faculty member mentioned spending time reflecting on how best to approach group projects in the online environment. They stated, “I had a group project in the spring and they had a hard time working together in terms of common times and just engaging at a distance, so if they’re not all on campus, and not even in the same time zone, it created some challenges.”

In terms of a positive impact due to COVID-19, one faculty member mentioned that recording lectures as videos provided the opportunity to “flip the classroom” and change their typical teaching method. This was something they had wanted to incorporate previously but did not have the time or opportunity. However, one faculty had the opposite experience. As a more “traditional” lecturer, the faculty member stated a good deal of time was spent “rebooting” their courses when the move to online happened, noting the traditional lectures were no longer resonating with students. They stated that they prefer to lecture but be interrupted with questions, which was not an option, of course, in a pre-recorded lecture. Therefore, some had difficulty in adjusting their teaching methods due to COVID-19.

### **Future Research & Study Limitations**

While there was consensus among the faculty interviewed for this study, it was a small set of participants. A larger participant pool may have resulted in differing opinions, or entirely different themes discussed. Of the nine engineering departments at UB, only two were selected for this study. While this restriction on departments was done purposefully by the author, opening the study to additional departments may have resulted in additional study participants. Therefore, it could be useful to conduct similar interviews with faculty from other engineering departments to determine if there is consensus among these other groups.

The timing of the study was both fortuitous and a limitation of this study. It was an interesting time to pose these questions to engineering faculty, having just completed the whirlwind end of the Spring 2020 semester online, and as they prepared for the upcoming, mostly virtual Fall 2020 semester. However, many faculty could not participate for the same reason as they were busily preparing for a semester like no other. Therefore, while grateful for the insight into the teaching

needs of faculty during a global pandemic, the author would be interested in revisiting this topic in the future under more “typical” circumstances.

Further, the author intends to compare the results of the local UB site report interviewing business faculty with the results of this engineering faculty study in a future paper to determine if teaching needs overlap between these two major schools. The push for experiential learning opportunities is strong in both the business school and the engineering school at UB, and therefore a deeper dive into how the library can assist in those areas could be useful both locally and more broadly.

## **Next Steps**

The initial takeaways from analyzing the interview transcripts show an increased need, due to COVID-19, to provide electronic access to materials wherever possible. While reading a textbook or supplementary material on a computer screen is not always ideal, it is better than not having access at all. Therefore continuing to expand electronic access to materials, including other materials used in engineering research such as standards, should be an ongoing initiative. Electronic access to materials can help to solve some, although not all, equity issues when library users are unable to come to the library during open hours.

The author will continue to work with faculty and department chairs to understand what resources they need for their students in the context of teaching. As it is a general guideline at UB for the Libraries not to purchase textbooks, the author will investigate which supplementary reading materials can be purchased electronically to ease the cost burden on students and to provide easier access to materials. In addition, the author plans to work closely with the scholarly communications team at the Libraries to make engineering faculty aware of open education resources (OERs) that exist in the field of engineering currently, as well as the support available to them if they elect to personally create OERs for their courses. Noting that only one of the papers identified in the literature review mentioned OERs in regards to COVID-19 [16], this is an area that could benefit from additional review and study. The author will continue to investigate the literature concerning academic libraries, OERs, and how COVID has impacted their use among engineering faculty.

Another key takeaway from this study is how important it is for librarians to speak with faculty about not just their research, but also their teaching needs. All of the faculty interviewed were surprised but excited and even eager to speak about their teaching and how the library could help, as they often did not think about the library when considering their teaching, beyond how their students might use it. Therefore, awareness is an issue and the author plans to continue to make faculty aware of how the library and the librarian can support their teaching needs. One specific example of how the library could be more present, even in courses not requiring scholarly research, is to request that faculty provide students the citations to materials instead of providing the full text of the article on Blackboard so that students would then have to seek out the information on their own.

If the COVID pandemic taught this author anything, it is that short, pointed video recordings could be helpful in many cases, and provide an opportunity for outreach without taking up precious class time. Ali and Gatiti noted providing virtual library support to faculty and students was a core role of librarians during the COVID-19 pandemic [14]. The study conducted by Sukula, et al. demonstrated that providing services digitally has been discussed in academic librarian literature throughout the twenty-year time span they reviewed [15]. Therefore, it could be assumed that if offering virtual and digital services was beginning to be used before COVID, it will continue and likely expand in a post-COVID world. While one must be careful that not all library resource instruction opportunities turn into recorded sessions, it provides an alternative that could work in situations where the librarian had not been present in class previously. Therefore another idea to integrate the library into more courses could be creating a two-minute video on searching for “known items” via the Libraries website. This would provide a way to introduce students to the Libraries website, search interface, and other available resources and services. It would also alleviate the faculty from having to teach these skills themselves.

Ultimately, the literature available concerning academic libraries, COVID-19, and the support of teaching faculty is limited at the time of publication. Therefore this study helps contribute to the understanding of how these unprecedented times due to COVID have shaped how academic librarians support faculty in their teaching needs. However, additional insight is likely to emerge as other studies are completed. Academic librarians could benefit from reviewing additional literature as it is published from faculty examining how their teaching changed during the pandemic. While there are already a handful of papers that exist [17-22], it is presumed more will be published in the coming months and years.

## **Conclusion**

Overall, despite the small number of participants, the author felt this study was successful, especially given the timing as many faculty were deep in the planning stages to switch their courses to an online environment due to COVID-19. It is always beneficial to the engineering librarian to connect with faculty over a conversation, so to have them all generously provide an hour of their time was incredibly fortunate.

The insights provided by the faculty interviewed for this study were invaluable and may not have been ascertained through a survey. Therefore while the process of interviewing can be time-consuming, the author believes it was certainly worthwhile in this case. While surveys are absolutely useful, the author hopes that colleagues at UB Libraries and elsewhere will seek out opportunities to interview faculty to gain a greater understanding of their needs and challenges.

While one would hope that COVID-19 is the only global pandemic one sees in their professional career, there are certainly many lessons that can be gleaned for the future of library services and outreach. These interviews with engineering faculty helped the author better understand the process faculty take to prepare for their teaching under more typical circumstances, as well as how they quickly adapted for an online learning environment. Being a vocal and persistent ally is one way the librarian can continue to spread awareness of the library’s services and resources that are available to faculty (and their students) now and in the future.

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## **Appendix A: Recruitment Email**

Subject: UB Libraries study on undergraduate teaching in engineering

Dear [First Name of instructor],

The University at Buffalo Libraries is conducting a research study on the teaching support needs of instructors in order to improve services for the School of Engineering and Applied Sciences. Would you be willing to participate in a one hour interview to share your unique experiences and perspectives?

The information gathered at UB will be essential for UB Libraries to further understand how the teaching support needs of engineering faculty and instructors are evolving, and where the Libraries can provide additional assistance.

If you agree to participate, the interview will be conducted virtually via Zoom. The interview will be recorded in Zoom so a transcription can be created. Transcripts will be de-identified and used for coding and analysis purposes. The recordings will not be viewed by anyone other than the PI and will be deleted as soon as a de-identified transcript is created.

If you have any questions about the study, please don't hesitate to reach out and thank you so much for your consideration.

Sincerely,

NAME

Principal Investigator

## **Appendix B: Interview Questions**

### ***Background and Methods***

1. Tell me about your experiences as a teacher [E.g. How long you've been teaching, what you typically teach, what you currently teach]

- Does your teaching incorporate any particular teaching methods or approaches? [E.g. experiential learning, case method, design thinking, problem-based learning, flipped classroom]?
- Have you received any support/relied on others towards developing your teaching approach?
- Are there any other supports or resources that you think would be helpful for you?

2. Do you currently teach more general research or study skills in any of your courses? [E.g. finding sources, evaluating sources, data literacy, financial literacy, critical thinking]

- How do you incorporate this into your courses? Have you experienced any challenges in doing so?

### ***Materials and Content***

3. What materials do you typically create in the process of developing a course? [E.g. syllabi, course website, online modules, lectures, assignments, tests]

- How do you make these materials available to students?
- Have you experienced any challenges in creating and/or making these materials available?

4. Beyond the materials you create in the process of developing a course, what other kinds of content do students typically work with in your courses? [E.g. readings from textbooks or other sources, practice datasets, films]

- How involved are you in how this content is selected and/or created?
- How do you make these materials available to students?
- Have you experienced any challenges in selecting, creating and/or making these materials available?

### ***Student Literature Research Needs and Skills***

5. Is library or scholarly research needed for any of the classes you teach?

- If so, do you talk with your students about how and where to conduct this research?
- Do you talk with your students about evaluating sources?

### ***The Impact of COVID-19***

6. How did you shift to online teaching with the COVID-19 pandemic in the Spring 2020 semester?

7. How has COVID-19 impacted how you are preparing for the upcoming Fall 2020 semester?

### ***Wrapping Up***

8. Are there any ways that the library or others on campus have helped you with your teaching in ways that have not yet come up in this interview?



### Appendix C: Coding Scheme

<b>Code</b>	<b>Definition</b>
Course materials	Any materials used or created for courses by faculty
COVID-19	Any discussion related to COVID-19
Electronic access to resources	Electronic access to library resources including databases, journals, e-books, and other information sources
Library and librarian	Any discussion of how the library and/or librarian as it relates to faculty teaching
Open Education Resources (OERs)	Any discussion related to OERs or other freely available resources
Student research and searching skills	Library and scholarly research skills of students via databases or the internet
Teaching style and methods	Teaching practices of faculty
Virtual learning	Discussion related courses moved to a completely remote or hybrid format; preparing to move courses to completely remote or hybrid format