"Making It Happen": Building Relational Teaching into the Online World of COVID-19

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abstract: The onset of the COVID-19 pandemic required shifting information literacy instruction from face-to-face to online formats at the University Libraries of the University of South Dakota. This case study narrates how the instructional team there introduced innovations into a Freshman Writing course that enabled instrumental (that is, goal-oriented) and relational teaching in the online-only environment. The team applied social network theory and a disaster response model to plan and analyze their innovations. The affordances of the Zoom video conferencing platform and the embedded librarian model enabled them to expand their information literacy instruction to include online students for the first time. The instructional team plans to extend these innovations to other information literacy mandated courses.

Introduction

Disruptions such as weather-related disasters or pandemics can become opportunities for innovation. Academic institutions, including their libraries, have had to rethink how to provide services for their stakeholders in the context of the COVID-19 pandemic. This case study focuses on innovations in one large, multi-section general education course, Freshman Writing, at the University of South Dakota (USD). The authors are the information literacy coordinator and the instructional services librarian, who comprise the instructional team at the University Libraries. They describe pre-pandemic instruction in the University Libraries' administratively mandated developmental information literacy (IL) program and the instructional changes that they initiated in response to the pandemic. Social network theory and a disaster response model provided lenses through which the team sought to understand disruptions aris-

ing from the pandemic and to plan productive responses. Their innovations successfully modified the delivery of IL instruction to retain important aspects of pedagogy. In addition, leveraging the affordances of video conferencing enabled them to increase the number of students receiving IL instruction by including students who had never received such teaching before. The authors discuss the innovations they introduced into the University Libraries' IL instruction program, the future trajectory of IL teaching, and the challenges they face in the evolving context of COVID-19.

Context

The University of South Dakota, a medium-sized public doctoral university with high research activity, is the flagship liberal arts campus of the South Dakota Board of Regents system. Home to over 9,000 undergraduate and graduate students, USD is the state's oldest institution of higher education and houses the state's largest library, the University Libraries.

Since 2005, USD has carried out a robust, face-to-face, course-integrated IL program, thanks to an IL mandate promulgated by the state's Board of Regents.[1] USD provides this developmental IL program in eight general education courses usually taught to freshmen (Freshman Writing, Honors English, Introduction to Literature, and Public Speaking) and sophomores (Advanced Writing, Business Writing, Creative Writing, and Honors Interdisciplinary Civilization). The program focuses on fostering students' IL skills across the required sequence of general education courses.

USD's IL instruction reflects the recognition that all communication has both instrumental (that is, content- or goal-oriented) and relational dimensions, as described by Paul Watzlawick, Janet Helmick Beavin, and Don Jackson.[2] It reflects these two dimensions. Instrumental teaching imparts the skills and resources required to complete specific course assignments, and relational teaching creates and maintains relationships between students, the library, and librarians. A typical instructional session comprises a short, instrumental demonstration of the library resources needed for the assignment that frames the session, followed by one-on-one, relational interactions between the librarian and each student present. The library supports one research assignment per semester for mandated IL courses, except for Freshman Writing, which receives two library sessions per semester to help students with a media analysis and a general research paper. Evaluation and assessment have provided valid and reliable indicators that students are satisfied with the teaching they have received, have learned IL skills, and have experienced greater confidence and self-efficacy as a result.[3]

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Library Support for Online Students

The instructional team coordinates the IL program and provides instructional design to ensure consistency of content and quality across all IL sessions. Ideally, this instruction should include not only on-campus students but also distance learners. Before the onset of the pandemic, USD delivered distance education primarily in an asynchronous online format. A major concern for the instructional team has been their inability to provide distance students with IL instruction.

Reflecting a national trend, USD's students increasingly choose to participate in online education. According to the National Center for Education Statistics, 35.3 percent of American higher-education students were enrolled in online courses in the fall 2018 semester, with 18.7 percent taking at least one such course and 16.6 percent registered for exclusively online education.[4] For the same semester, 40 percent of USD's students were enrolled in online courses, with 16 percent taking at least one such course and 24 percent receiving their education exclusively online.[5] Regardless of their location, USD's students can choose to take courses or sections of courses online. On-campus students registering in Freshman Writing may enroll in either face-to-face or online sections.

Prior to the pandemic, students in face-to-face sections of Freshman Writing received IL instruction in support of two research-based assignments, while students in online sections did not receive this teaching. According to statistics available since 2017 via USD's Banner enrollment management system, online sections comprise approximately one-fifth of all sections of Freshman Writing, with between 10 and 24 students in each section. In short, many students did not receive IL instruction. This situation was problematic for several reasons. First, students receiving little or no IL teaching are disadvantaged in their academic and later professional careers. Second, inequity in instruction complicates USD's inclusivity efforts. Finally, students who receive reduced services can become disconnected from their university, leading to retention problems.

Since 1996, the Association of College and Research Libraries (ACRL) has promulgated Distance Learning Standards that affirm "access entitlement":

> All students, faculty members, administrators, staff members, or any other members of an institution of higher education are entitled to the library services and resources of that institution, including direct communication with the appropriate library personnel, regardless of where they are physically located in relation to the campus; where they attend class in relation to the institution's main campus; or the modality by which they take courses.

ACRL's distance standards document notes that "the attainment of lifelong learning skills . . . is a primary outcome of higher education, and as such, must be provided to all students." ACRL undergirds its distance education guidelines with such principles as equity of instruction, direct access to library personnel, and prioritizing of academic requirements and outcomes through innovative approaches, procedures, and systems. In the same document, ACRL's Bill of Rights for the Distance Learning Community advocates for creativity and sustainability in meeting the library needs of distance learners.[6]

A significant problem in providing IL instruction to online students is "low knowledge" of the library services available to distance faculty and students. Cassandra Kvenild, Teagan Eastman, Erin Davis, and Kate Conerton surveyed distance faculty at five midsized, Western public research universities. Both their literature review and their survey results demonstrated "a pattern of significant gaps in [instructors'] knowledge about library services for learners." Kvenild and her associates determined that less than one-third of the instructors surveyed (29 percent) knew about online library research guides and that only 10 percent included a research orientation by a librarian in their online courses. Eighteen percent of the distance faculty surveyed believed that their students already possessed IL skills, and 13 percent considered it their students' responsibility to contact librarians for help. Kvenild and her team argued that libraries need to market their services more consistently and persistently to distance education faculty.[7] Library administrators and librarians have legitimate concerns, however, about issues of workload, scalability, and sustainability in providing IL instruction for the "24/7" world of online teaching and learning. Therefore, it is not surprising that online courses often provide only links to the library or that many academic libraries give online learners little more than a dedicated page offering indirect access to librarians via links to the library's reference service and a list of subject specialists.

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IL Instruction for Online Students Pre-Pandemic

In accord with the values and actions endorsed by the ACRL Distance Learning Standards, the instructional team considered how they might integrate USD's online students into IL instruction. Considering the challenges in providing online students with teaching of comparable content and quality to that provided face-to-face, the instructional team searched for a communication model that they could employ to recruit online instructors to participate in IL sessions. Because they were concentrating on reaching online students via their relationships with online instructors, the instructional team chose social network theory, which "focuses on the role of social relationships in transmitting information, channeling personal or media influence, and enabling attitudinal or behavioral change."[8]

Arising from social network theory, Mark Granovetter's notion of "the strength of weak ties" provides a theoretical basis for the instructional team's attempts to reach asynchronous online students.[9] According to Granovetter, individuals can be connected by strong or weak ties. Strong ties correspond to closer, more direct relationships, such as friends and close relatives, and weak ties involve more remote, less direct relationships, such as acquaintances ("friends of friends") or distant relatives. Absent ties indicate gaps where no relationships are present. Strong ties bind people into dense, cohesive groups of similar individuals; weak ties link people between groups into more loosely connected networks of more diverse individuals.[10] Nan Lin, Walter Ensel, and John Vaughn note that "weak ties [allow] a person to reach
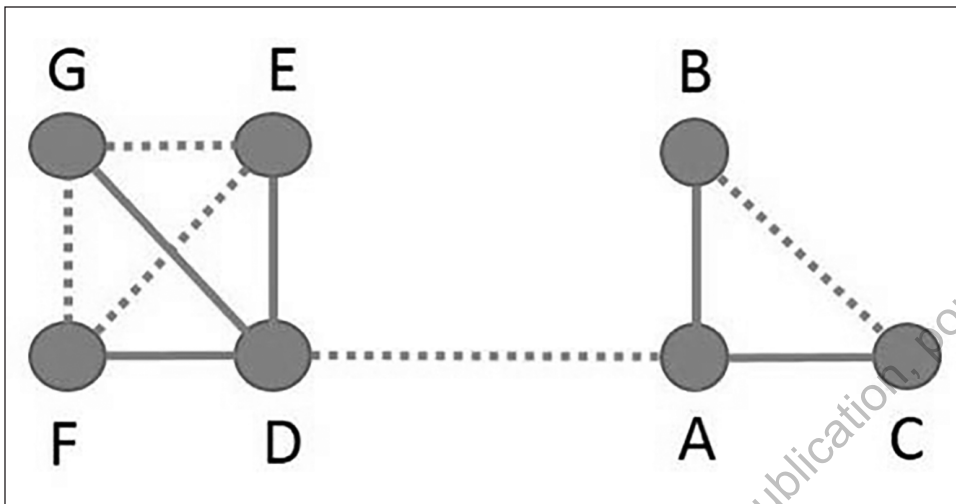
Figure 1. A representation of the strong and weak ties that can connect individuals. Solid lines depict strong ties, which bind similar individuals into a close relationship. Dotted lines designate weak ties that loosely link diverse individuals. There is an absence of ties between nodes E and B, indicating a gap where no relationship is present.

beyond his or her small, well-defined social circle in order to make connections with parts of the social structure not directly accessible to him or her."[11] Figure 1 depicts the strong and weak ties that link people (see Figure 1).

Weak ties can form bridges between groups consisting of individuals connected by strong ties. Weak ties may function as important conduits of information, opportunity, and innovation.[12] Social scientists have demonstrated that weak ties play significant roles in such diverse activities as providing advice or referrals,[13] creating social support networks,[14] and spreading innovations.[15] Martha Feldman, the team of Mara Adelman, Malcolm Parks, and Terrance Albrecht, and that of David Constant, Lee Sproull, and Sara Kiesler have studied the influence of modern electronic communication technologies on social relationships. They have found that such technologies as e-mail, electronic message boards, and computer networks enable individuals to forge weak ties beyond those possible by face-to-face communication.[16] Research also indicates that the strength of weak ties is an intercultural phenomenon.[17]

Lesley Milroy and James Milroy borrow from Everett Rogers's theory of the diffusion of innovations, noting that the strength of weak ties explains how innovations spread in loosely connected groups.[18] Early adopters, who are members of groups with strong ties, take up new ideas via weak links. Because these early adopters are "influencers," they promote innovations within their groups via their strong ties. Milroy and Milroy claim Rogers's study of 1,500 innovations supports the view that innovations initially spread along weak ties between groups but are then spread via strong ties by early adopters within groups.[19]

How does this theory apply to IL instruction for asynchronous online students? The instructional team based their thinking on two principles of IL instruction es-

poused by ACRL: that equal access to critical-thinking instruction like IL teaching is every student's right, and that providing education in critical-thinking literacies is the responsibility of the entire faculty.[20] Online students are not easily accessible to librarians for reasons of scheduling, scalability, and sustainability. These students learn in a "24/7" world that is incompatible with most librarians' resources, schedules, and workloads. Expressed in terms of the strength of weak ties (see Figure 1), the ties between librarians and asynchronous online students are absent. Given the difficulties inherent in directly reaching asynchronous online students with IL instruction, librarians must rely on their relationships with distance faculty to ensure that these students receive instruction in IL skills.

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Seen through the lens of the strength of weak ties, librarians often have weak ties to online instructors. In contrast, these instructors likely share strong ties with their students and with other instructors in their discipline. According to the strength of weak ties, librarians can pass innovations to instructors across their weak ties. If the instructors become early adopters, the new techniques can then become established practice through the instructors' strong ties with their students and with other faculty. Seeking to leverage the affordances of weak ties, the instructional team attempted to interest online English instructors in a train-the-trainer model.[21]

As the instructional team envisioned the train-the-trainer model, they would provide instruction in IL skills, tools, and teaching methods to English distance faculty. In turn, these instructors would teach IL within their courses and support their students' research. Additionally, the instructional team would provide research assistance for both instructors and their students. Learners would receive IL teaching and at-need, assignment-focused research help from their instructors, who are available in their "24/7" world. Among the advantages to instructors would be training and support in IL and its pedagogy, an increased ability to provide their students with important skills at the point of need, support from librarians in creating and facilitating research-based assignments, greater self-efficacy within their courses, and enhanced employability due to experience in IL training and teaching. Librarians would advance the university's teaching and learning mission by imparting important IL skills to more students, thus enhancing inclusivity and retention efforts. This would also elevate the status and visibility of librarians as IL pedagogy experts in distance education, while ensuring scalable, sustainable IL instruction.

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When the information literacy coordinator presented the train-the-trainer proposal to the English Department's director of writing, he responded enthusiastically. He immediately offered to contact an experienced and influential online instructor who had repeatedly requested IL instruction for her students. Upon learning the details of the train-the-trainer plan, however, she chose not to pursue it. The plan would have increased the already heavy workload of the instructor, who regularly taught five online sections of required writing courses each semester.

Upon reflection, the instructional team realized that they had overlooked an important relational aspect of the strength of weak ties, namely, trust. Daniel Levin and Rob Cross have noted the importance of trust in the acceptance of information, opportunities, and innovations passed along weak ties.[22] José Díaz and Meris Mandernach have also indicated the importance of trust in creating and maintaining librarian-faculty partnerships.[23] As Alicia Ellison points out:

> Our colleagues in the classroom are beleaguered with ever-increasing workloads . . . They do not want to hear about yet another "initiative" that they must fulfill. We librarians can position ourselves as allies of instructional faculty—providing friendly, collegial recommendations for improving learning of course content as well as information literacy in their students.[24]

As faculty colleagues, the instructional team failed to consider the instructor's workload and lost her trust when they proposed a plan that would impose more work on her.

Initial Changes During the Pandemic: Crisis Response

The arrival of the COVID-19 virus in South Dakota in the late winter and early spring of 2020 upended USD's status quo. On February 26, 2020, the university president announced that campus leaders would begin adjusting USD's Emergency Operations Plan to accommodate the possibility that the university would need to respond to COVID-19. At the same time, "situation normal" messages were being sent out, reminding faculty to order books for the fall 2020 semester and to reserve academic regalia for the spring commencement ceremony.

Any sense of academic normalcy was quickly shattered. In mid-March, while the university was on spring break, USD's president announced that instruction would be suspended for an additional week to allow faculty and staff to plan for the possible transfer of all courses to online instruction. The dean of libraries directed the instructional team to begin contingency planning, and on March 16, the dean and the team discussed using the Zoom Pro video conferencing platform for library instruction. By March 24, the university announced that students should leave campus for their homes, and face-to-face instruction would shift to a synchronous, online-only format.

The instructional team's initial focus, like that of most of USD's faculty, was simply to get through the remainder of the semester as safely as possible while providing meaningful instruction. Since librarians had already supported the first Freshman Writing research assignment with face-to-face instruction, the team designed synchronous online instruction for the second assignment, a general research paper. Realizing that video conferencing presents challenges for incorporating one-

on-one research interactions with students, the instructional team focused primarily on satisfying the instrumental goals of instruction. The research session would last approximately 30 minutes and consist of an introduction to interlibrary loan followed by a brief research demonstration. Each librarian was asked to create a Zoom account and then send Zoom invitations to the instructors of the sessions they were scheduled to teach. In addition, the instructional plan called for each librarian to provide their contact information so that students could request research assistance, if desired. Finally, the librarians were asked to record each session and provide instructors with links to the recordings for uploading into the D2L (formerly Desire2Learn) course management system for asynchronous use by students. The instructional team also furnished training and support for Zoom.

Planning for Fall 2020: Informed Crisis Response

The summer of 2020 was a time of regrouping and preparing for an uncertain future. Until the pandemic struck, the University Libraries' disaster planning had focused on physical events that might affect the building and utilities rather than services such as instruction. As a result, the dean of libraries relied heavily on the instructional team to manage the transfer from face-to-face to online teaching. During summer planning, it was unclear what direction the university would take regarding instruction; academic administrators considered face-to-face, hybrid, and online-only formats for the fall 2020 semester.

The dean of libraries tasked the instructional team with creating a strategic plan for IL instruction that could be shared with the university community. This new plan reflected the experience from the previous semester's Zoom-based teaching. Through the lens of a crisis-response model, one can understand and benefit from the decisions made by the instructional team in dealing with the complexities brought about by a major disruption. Yu Shi, Hee Jang, Laura Keyes, and Lisa Dicke developed one such model to analyze nonprofit agencies' responses to the COVID-19 crisis. Their model focuses on four components related to change processes: disruptions, ambiguities, innovations, and challenges.[25]

The term *disruptions* refers to changes to or discontinuations of service due to an intervening event, such as the COVID-19 pandemic. Ambiguities are uncertainties that arise out of these disruptions or questions that need answering, such as: How does the organization deal with this situation?[26] Addressing ambiguities can lead to innovation, by implementing a new or different way of behaving or using an established procedure for a new purpose or in a novel way. The fourth element, challenges, are issues that arise from innovation and must be addressed for the proposed solution to work. Challenges can include ensuring that necessary equipment, supporting infrastructure, or adequate transportation is available. Challenges may give rise to new ambiguities or questions. Mareike Schütt and Reinhold Pabst note that responses to disruptions are iterative, as challenges can cycle into ambiguities in a spiral-like progression that "represent[s] an ever-increasing adaptation to the changes caused by the crisis."[27]

The disruptions, ambiguities, innovations, and challenges model differs from other approaches to disruptive change in at least two important ways. First, it does not focus on innovation as the desired outcome but rather on restoring or sustaining essential services provided by nonprofit organizations during times of uncertainty and upheaval. Second, the model is value-neutral in its assumptions. Change is neither positive nor negative but is simply something that must be managed to restore and sustain important services. The paradigm of disruptions, ambiguities, innovations, and challenges provides a useful lens for organizations to examine their processes and responses to crises after the fact, while also offering a framework for shaping future responses.[28]

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Applying the disruptions, ambiguities, innovations, and challenges model, the instructional team identified several ambiguities brought on by the COVID-19 pandemic and the resulting disruption of face-to-face instruction. Higher-order ambiguities included: How long will this pandemic last? Will a return to face-to-face instruction be possible? What will a future "normal" look like? Not all ambiguities can be addressed in the immediate response to a disruption. There may be too much, too little, or even conflicting information. Thus, the team focused on more immediate and localized ambiguities concerning IL instruction. The initial ambiguity was: What format will instruction take during the fall 2020 semester? A related ambiguity was: If instruction begins in face-to-face mode, will the University Libraries have to switch to online-only instruction during the semester?

USD's provost and dean of libraries resolved the question of format by directing that IL instruction be provided online for the fall 2020 semester. The instructional team used the rest of the summer to design online synchronous instruction with two key ambiguities in mind. First: How should instruction take place to achieve instrumental goals? The second ambiguity was more elusive: How can relational teaching be incorporated into the synchronous online-only environment? These questions reflect the instrumental and relational goals of the University Libraries' instructional program and the team's desire to integrate relational teaching into online IL instruction.

During the pandemic, some libraries substituted online learning objects for face-to-face instruction.[29] While the University Libraries has a series of instructional videos available via its YouTube channel that cover the basics of using library resources to conduct research, the instructional team rejected this option. Researchers Jennifer Joe, Lindley Homol, and the team of Carrie Moran and Rachel Mulvihill point out that tutorials are not relational.

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They do not provide the relational teaching and personal availability that students and faculty value so highly during the enforced isolation brought on by the pandemic.[30] In the team's experience, students are more attentive if personal, flexible, assignment-focused IL instruction is provided rather than the impersonal, generic teaching typical of many online tutorials. Indeed, such tutorial-based IL instruction can impede the development of positive relationships with the library. Research by Mary Francis and the teams of Jessica Mussell and Carol Gordon, Nick Faulk and Emily Crist, and Moran and Mulvihill demonstrates that students will more likely connect with a library if they have direct contact with librarians.[31]

An additional problem with tutorials is that their creation is both time- and labor-intensive. Lydia Howes, Lynn Ferrell, Geoff Pettys, and Adam Roloff note that creating four videos intended to replace face-to-face instruction during the pandemic required a month of work in addition to their regular duties. Moreover, such work is wasted if tutorials are difficult for students to find on a library's home page.[32] Finally, the University Libraries' stakeholder departments and programs value relational, assignment-focused IL instruction and wanted it to continue in the online environment. For these reasons, innovation was necessary to introduce relational instruction into online teaching. The instructional team was eager to make it happen.

First Innovation: Zoom Instruction with a Relational Touch

The instructional team reflected on the online IL teaching provided during the spring 2020 semester. They examined Zoom's affordances and constraints and considered how the platform could resolve two ambiguities: How could they enable effective instrumental instruction? And could more relational aspects be incorporated into the Zoom-based teaching?

The university administration had purchased a Zoom Pro license for all faculty. Zoom is relatively stable and easily learned by both students and faculty. It is user-friendly across multiple device types, which is important given that some students may not have laptop or desktop computers at their disposal. Zoom Pro's features support aspects of universal design and so are accessible to nearly everyone, including people with a wide range of abilities. For instance, sessions can be recorded and streamed from the cloud for asynchronous viewing. Support for learners with auditory or cognitive disabilities or lower English proficiency is also available in the form of audio and video recordings with transcripts. Finally, Zoom permits instructors and students to interact without masks, thus approximating face-to-face interaction.

Despite these affordances, instruction delivered via Zoom is not the equivalent of face-to-face teaching. Zoom functions as a broadcast medium with one person speaking to many. The need to interact with technology to speak or even be seen can inhibit the spontaneous give-and-take of face-to-face interactions. Individuals often cannot see all of the other participants, especially in a large group, and thus might miss important nonverbal cues, such as looks of confusion or understanding. Zoom can also present difficulties for people with visual or motor disabilities.[33]

Regardless of these affordances and constraints, the instructional team determined that instrumental aspects of learning could be reasonably supported for most students by synchronous IL sessions using Zoom. They based their instructional design on the lesson plans developed for the spring 2020 semester. As in the spring, librarians scheduled IL sessions and provided instructors with links to forward to their students. Zoom-based instruction would consist of a 30-minute research demonstration in support

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of a research-focused writing assignment. The instructional team recommended that librarians use the "record meeting in the cloud" option when scheduling Zoom sessions and share links to these recordings with faculty.

Without realizing it, the instructional team had included some aspects of relational teaching in the spring 2020 lesson planning, which they purposefully retained for the fall semester. For instance, librarians had been asked to develop "welcome screens" that included personal photographs, names, and contact information (see Figure 2). Librarians were also encouraged to engage in relational exchanges such as greetings and small talk with faculty and students before their instructional sessions began and to conclude with thanks for participation and cordial farewells.

Welcome!

I'm Carol Leibiger, Library Coordinator of Instruction.

Contact me at: c.leibiger@usd.edu

Figure 2. A Zoom "welcome screen" greets students receiving online information literacy instruction from the University Libraries at the University of South Dakota. Each screen includes the librarian's photograph, name, and contact information.

Collaboration and relationship-building with stakeholders, especially course instructors, are important for the success of IL instruction, particularly in the online-only environment.[34] Strong ties between the information literacy coordinator and the English Department's director of writing ensured official acceptance of the instructional team's instructional design and its dissemination among the Freshman Writing instructors and teaching assistants. Strong ties among the online instructors afforded acceptance and support for the online IL instruction. The information literacy coordinator worked to establish and maintain ties to the English instructors by communicating with them about the IL instruction, requesting details about assignments and student topics, and serving as a conduit of additional information regarding IL and instruction.

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Librarians also did relational work by involving English instructors in their IL sessions. For instance, since students often use the chat feature in Zoom to ask or respond to questions, the librarians asked instructors to monitor the students' chat responses. This reduced the cognitive load for the librarians while allowing the instructors to participate actively in the session. Joe, Ellison, and Kay Shelton point out the importance of instructor participation in IL sessions, since this demonstrates to students that their instructors value and are knowledgeable about the content.[35] Instructors' monitoring of chat also ensures that student responses are not overlooked, which has both instrumental and relational importance.

Second Innovation: Bringing Back One-on-One Interactions

The instructional team believed their instructional design would meet the instrumental goals for IL instruction in the online environment. Having addressed the first ambiguity of IL instructional planning during the pandemic, they turned to a second set of ambiguities: Could they incorporate more relational teaching into online IL instruction? Could they integrate one-on-one interactions into this instruction? In addressing these ambiguities, the team turned to the embedded librarian model as an innovative way to provide more relational instruction.

The embedded librarian concept takes many different forms, but the overall focus is on a librarian's maintaining an ongoing presence in a course, where they can develop a more direct, helpful, and sustained relationship with students over a semester or year. Services provided by an embedded librarian may include holding office hours, creating tutorials or research guides, and reviewing or collaborating on research assignments.[36]

Foundational to this work is becoming a member of a learning community that brings students together around a discipline.[37] Embedded librarians support online students in their learning communities and aid them in developing connections to the university, the library, and librarians.[38] Gordon Muir and Holly Heller-Ross argue that such support "increases contact with library resources and services."[39] Embed-

ded librarianship thus offers aspects of relational teaching missing from much online instruction. It promised to restore relational interactions with students that had been lost in the transfer to online instruction.

The instructional team had already gravitated toward the embedded librarian model during the spring 2020 semester when they asked librarians to provide their

contact information to students in each IL session. On the other hand, they recognized that this model can be time-consuming, especially given the extensive list of essential services for students prescribed by the ACRL Standards for Distance Learning.[40] Asking their colleagues to become embedded in sections of Freshman Writing for an entire semester might negatively impact both the librarians' workload and the scalability and sustainability of the IL program. Amy York and Jason Vance point out that librarians embedded in courses take on this work in

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addition to their other duties.[41] Moran and Mulvihill note that the embedded librarian model becomes harder to sustain when librarians teach in large numbers of courses and sections, as USD's librarians do.[42]

In response to the second ambiguity associated with relational teaching (that is, how to include one-on-one interactions in IL instruction), the instructional team designed a modified embedded librarianship model for the fall 2020 semester. This innovation attended to individual librarians' workloads while it promoted relational teaching. The embedded model called for each librarian to support the assignments aligned with the sessions they facilitated. Librarians would deliver individualized research assistance in response to student requests. This model supplemented the University Libraries' traditional reference service by replacing the anonymous reference chat widget with a "real person" with whom students had previously interacted. Providing this support personalized the research process in a relational manner while satisfying the instrumental need for assistance. Librarians were urged to respond quickly to requests for help from "their" students, recognizing that online students expect almost instantaneous answers.[43] The dean of libraries approved the modified embedded librarianship model, and librarians implemented it in the fall 2020 semester.

This innovative move offers several advantages. First, limiting the embeddedness of each librarian to a specific assignment addresses concerns about additional workload. Second, each Freshman Writing section receives two distinct IL sessions. In many cases, these students work with two different embedded librarians, which increases their known points of contact and the likelihood that they will reach out to the library for future information needs. Francis remarks that increased student-librarian contact results in "a closer relationship between the students and the library, an increase in reference questions asked, and most importantly higher quality projects."[44] Adelia Grabowsky reports that the positive effects of student-librarian relationships include "facilitat[ing] a sense of community and assist[ing] in enabling

the library's mission of connecting needed library services and resources, regardless of location."[45] The presence of different librarians teaching IL skills and supporting the research for multiple assignments also increases the visibility of USD's librarians.[46]

Third Innovation: Asynchronous Online Instruction

The two previous innovations addressed the instrumental and relational needs of students whose sections were moved from face-to-face to synchronous online instruction due to the pandemic. Students in asynchronous online sections, however, still did not receive library support beyond links to the University Libraries' home page or its online reference service. Two ambiguities remained, with slight modifications, for those distance students. First: How should instruction occur to achieve instrumental goals in asynchronous sections? Second: How can relational teaching be integrated into the asynchronous, online-only environment? The instructional team looked for ways to make it happen.

During the fall 2020 semester, the instructional team reflected on the differences between synchronous and asynchronous online instruction to determine how the University Libraries might provide IL instruction for students in asynchronous sections. Unlike synchronous students, asynchronous students do not learn together at a specific time and in a specific place. They share virtual space in a course management system, where they participate according to their own schedules, often at different times. Their main source of interaction will likely be their instructor rather than fellow students. Given the "24/7" nature of asynchronous learning, instructional design for Zoom teaching of synchronous sections of Freshman Writing would not work for asynchronous students because they have no regularly scheduled class times. An additional challenge was the expectations of the English Department. When the information literacy coordinator asked asynchronous online instructors about including IL instruction in their Freshman Writing sections, they responded that asynchronous learning is too dispersed to take advantage of IL instruction as traditionally provided by the librarians.

The information literacy coordinator began to consider whether the affordances of Zoom could be leveraged to create "canned" research demonstrations for asynchronous online students. Something similar had been attempted by J. Michael Lindsay and his colleagues, who created short "Talking PowerPoint" videos using Zoom to replace face-to-face IL instruction during the pandemic.[47] It occurred to the information literacy coordinator that research demonstrations of synchronous instruction were being recorded and shared with instructors for later use by synchronous students, and she realized that this process could be reversed for asynchronous online students. Whereas librarians had provided video recordings of IL teaching to instructors after each session, such videos could be recorded specifically for use by asynchronous students before they were needed and then posted to the course management system, where students could access them at the point of need. This development addressed the first ambiguity of asynchronous IL instruction, namely, how to provide instrumental research demonstrations for asynchronous students. In planning synchronous instrumental instruction, the instructional team encouraged librarians to include such relational moves as greetings, small talk, responses

to student and instructor comments, thanks, and farewells. The IL instruction for asynchronous students would be recorded in the absence of a class, however. This gave rise to an ambiguity unique to asynchronous instruction: How can librarians engage in relational moves if they teach alone in a video recording? In response to this ambiguity, the information literacy coordinator decided to ask asynchronous instructors to collaborate with her in recording IL research demonstrations for their students.

Returning to the notion of strong and weak ties illustrated in Figure 1, librarians have absent ties to asynchronous students and weak ties to instructors in IL-mandated courses. Innovations spread along weak ties from innovators to early adopters or influencers, who spread them via strong ties within their groups. As an innovator, the information literacy coordinator sought to conduct a pilot with a Freshman Writing instructor who would participate in the recording of research demonstrations. The instructor would serve as an influencer and encourage other asynchronous instructors to use the videos by dint of their strong ties. Given the importance of librarian-faculty collaboration noted by Melissa Moore, by Robert Miller and his colleagues, and by Moran and Mulvihill,[48] it was essential that an experienced, influential instructor collaborate in recording the research demonstrations.

> **Whereas librarians had provided video recordings of IL teaching to instructors after each session, such videos could be recorded specifically for use by asynchronous students before they were needed and then posted to the course management system, where students could access them at the point of need.**

The information literacy coordinator approached the instructor who had declined to participate in the train-the-trainer model proposed earlier. Presented with the proposal to collaborate on recorded research demonstrations for the Freshman Writing assignments, the instructor immediately recognized the benefits of participating. As the instructor of record ("wielder of the grade"), her participation would influence student attitudes toward the video and thus their attentiveness to it. Since she knew her students and their interests and abilities, she could "stand in" for her class, asking questions and seeking clarification if necessary. Additionally, she could remind students of the importance of the research demonstration and show that she was knowledgeable about and valued IL. The instructor also realized the benefits for her students of short, assignment-focused videos to support their research-based assignments.

The information literacy coordinator and the Freshman Writing instructor recorded research demonstration videos at points in the fall 2020 semester when students were introduced to the two research-based writing assignments. The information literacy coordinator scheduled these asynchronous sessions to coincide with her support for the same assignments in synchronous Freshman Writing sections.

This added little to her workload, as she used the same lesson plan for both types of online sections, and it ensured that the video recordings for asynchronous students would be similar in content to those for the synchronous Freshman Writing sessions. The instructor participated enthusiastically, asking questions, commenting positively on the research resources and skills demonstrated, and reminding students of the parameters of the assignments.

Through this innovation, the information literacy coordinator addressed the second ambiguity of asynchronous IL instruction: How can relational teaching be integrated into the asynchronous, online-only environment? Collaborating with the Freshman Writing instructor enabled the inclusion of relational moves in the research demonstrations. Additionally, she integrated the modified embedded librarian model developed for synchronous online students into the IL instruction for asynchronous Freshman Writing students. The information literacy coordinator provided contact information to the students at the beginning and end of the research demonstrations and emphasized that she was available to help with questions and issues related to their research-based writing assignments. The instructor enthusiastically supported this research assistance and encouraged students to contact the information literacy coordinator, to whom she also forwarded the research-related student e-mails she received. The instructor noted that students reacted positively to the videos, and she also noticed an improvement in their writing assignments. An unanticipated benefit for both the instructor and the information literacy coordinator was the availability of the videos for future use as long as the assignments remained constant. A modest investment of time and collaborative work efficiently provided IL instruction to asynchronous Freshman Writing students. This instructor requested similar videos for all her future writing courses.

With encouragement from the director of writing, the information literacy coordinator contacted all of the asynchronous Freshman Writing instructors and offered to record instructional videos with them in the spring 2021 semester. Most instructors immediately agreed to participate, and some even called the information literacy coordinator and asked to participate before she could contact them. As a result, she acted as an embedded librarian for the five asynchronous online sections of Freshman Writing. Due to this innovation, all Freshman Writing students received instrumental and relational IL instruction for the first time.

Since the information literacy coordinator provided all of the instruction to the asynchronous online students in addition to her regular teaching load, her workload increased for the spring 2021 semester. However, this extra work ensured that asynchronous students received necessary and comparable IL instruction. In addition, instructors can reuse the videos in the future, limiting the work of asynchronous IL instruction to research support as an embedded librarian. Participating instructors reported that their students reacted positively to the videos, and many requested a combination of collaboratively created videos and research support by an embedded librarian for their other asynchronous IL-mandated writing courses.

Discussion

Prior to the pandemic, the University Libraries had a face-to-face IL program that fulfilled both instrumental and relational instructional goals. Due to the pandemic, all face-to-face instruction moved to online synchronous teaching. The instructional team exploited Zoom's affordances to introduce three innovations into IL instruction for both synchronous and asynchronous online students. First, it enabled assignment-focused research demonstrations that realized the instrumental goal of teaching students the skills and tools necessary to complete their writing assignments. Second, to provide relational, one-on-one instruction, the instructional team developed and implemented a modified version of the embedded librarian model. Third, the information literacy coordinator collaborated with a Freshman Writing instructor to create research demonstration videos that could be viewed by asynchronous students, which fulfilled both instrumental and relational goals of IL instruction. This innovation, together with the modified embedded librarian model, was subsequently extended to all asynchronous Freshman Writing sections.

Disruption played a significant role in this narrative. Seen through the lens of the disruptions, ambiguities, innovations, and challenges model, the instructional team addressed the ambiguities arising from the disruption caused by the COVID-19 pandemic by introducing new practices and modifying an established practice to maintain and even grow a valuable library service. Interestingly and perhaps paradoxically, the University Libraries' instructional program not only weathered these disruptions but also emerged better and stronger because of them.

The instructional team believes their innovations reach more students in relationally appropriate ways despite the limitations imposed by delivering instruction in both synchronous and asynchronous online sections. This confidence is grounded in years of teaching experience combined with a long-term focus on incorporating relational teaching, which is valued by the University Libraries' stakeholders. This is also supported by qualitative and quantitative data.

Anecdotal evidence provided by instructors across synchronous and asynchronous sections of Freshman Writing indicates that they are satisfied with and support the innovations in IL instruction. Instructors and students in asynchronous sections provided more feedback, which is consistent with the fact that they and their students had received this teaching for the first time and valued it. Instructors whose sections moved from a face-to-face to an online-only format were already accustomed to receiv-

> **The instructional team believes their innovations reach more students in relationally appropriate ways despite the limitations imposed by delivering instruction in both synchronous and asynchronous online sections.**

ing IL instruction and expected it to continue in the new environment. Instructors in both synchronous and asynchronous sections embraced the embedded librarian model. Many students mentioned that instructors had sent them to "their" librarians for research assistance. Further evidence of success is the eagerness of instructors of asynchronous sections to participate in the Zoom-plus-embedded-librarian model.
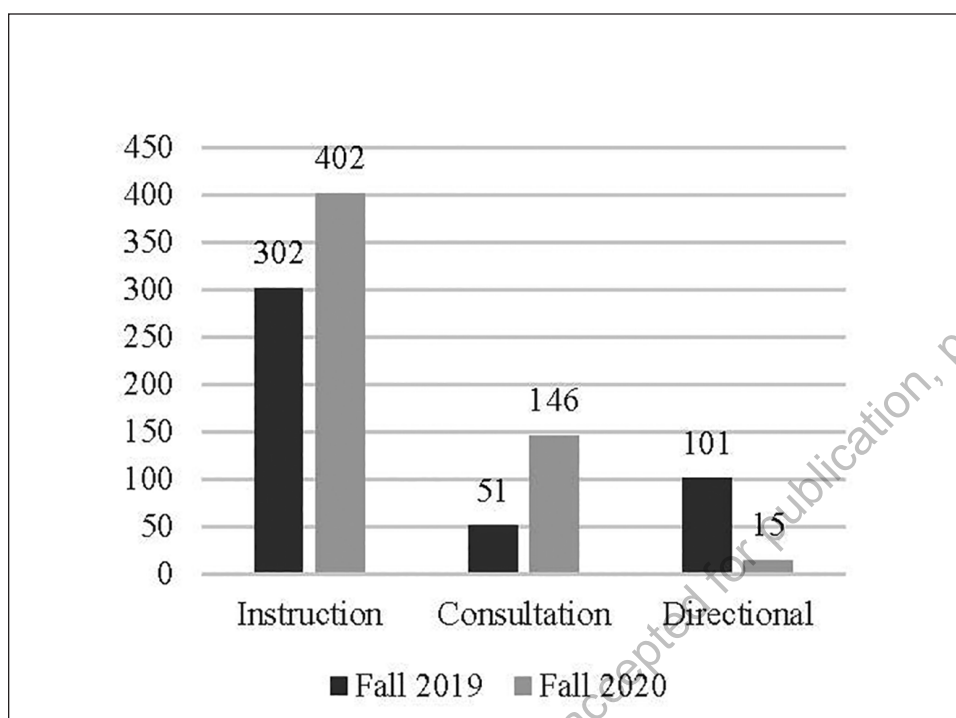
Figure 3. The number and types of reference transactions handled by the University Libraries at the University of South Dakota (USD) for the fall 2019 semester, before the COVID-19 pandemic, and a year later, during it. The USD Libraries classifies nondirectional reference encounters as instruction, showing someone how to use a database or other tool, and consultation, a research collaboration between a learner and a librarian, generally of longer duration.

An expectation for the embedded librarian model was that reference consultations by librarians would increase as they actively encouraged students to contact them with research questions during the assignments that they facilitated. Figure 3 shows the distribution of reference transaction types for the fall 2019 semester (before the pandemic) and the fall 2020 semester (during the pandemic). The University Libraries sorts nondirectional reference encounters into instruction or consultation, according to the type and length of interaction. Instruction involves showing a learner how to use a database or other tool to conduct research and can be accomplished relatively quickly. Consultation entails learner-librarian research collaboration, which is generally of longer duration.

Data from DeskTracker, a library statistics collection software program used by the University Libraries, provides indirect evidence of an increase in reference encounters due to introducing the embedded librarian model into Freshman Writing. Instructional reference encounters increased by 33 percent, from 302 in fall 2019 to 402 in fall 2020. More significant is the growth in consultations, a more typical interaction between students and embedded librarians. Consultations increased from 51 in fall 2019 to 146 in fall 2020, an almost threefold increase. These statistics indicate
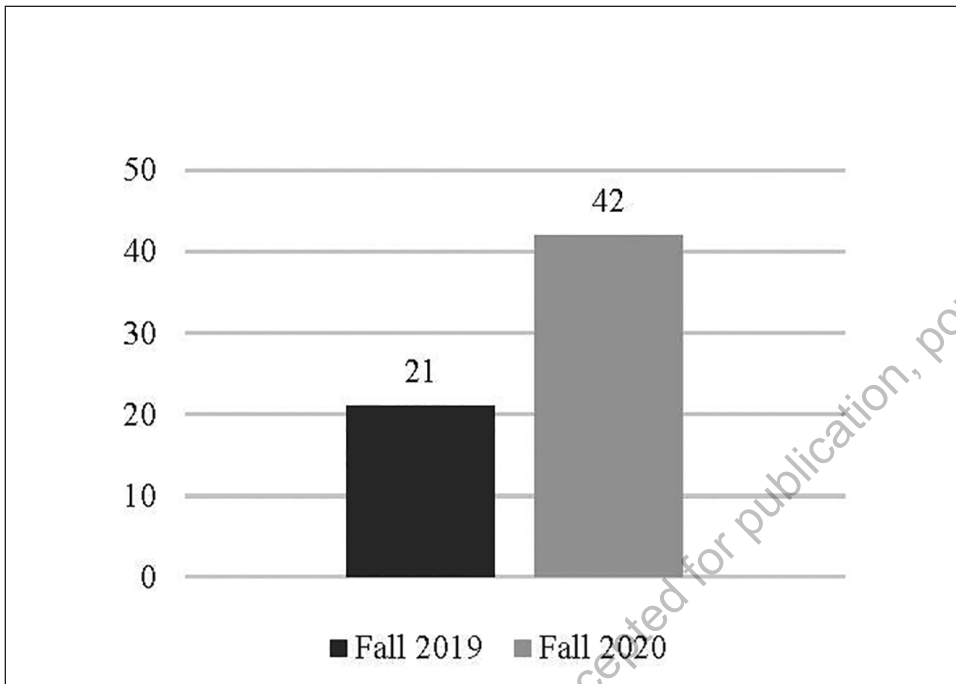
Figure 4. Reference transactions related to English courses, including Freshman Writing, handled by the University Libraries at the University of South Dakota for the fall 2019 semester, before the COVID-19 pandemic, and a year later, during it.

increased learner-librarian interactions, which can promote a positive relationship with the library. The increase in consultations is likely driven in part by the introduction of the embedded librarian model and the increased number of students receiving IL instruction in Freshman Writing.

Figure 4 highlights the reference transactions that were specific to English courses, including Freshman Writing. Unfortunately, DeskTracker does not provide such data at the level of the individual course. However, since USD's freshmen are required to take Freshman Writing in their first (usually fall) semester, and the bulk of fall-semester English-related reference encounters have traditionally supported research related to Freshman Writing assignments, it is reasonable to assume that many of the encounters attributed to English involve students enrolled in that course.

The lack of granular data specifically identifying consultations that support Freshman English is a challenge that can easily be addressed by modifying DeskTracker. That this challenge arose out of innovations illustrates several important issues. First, innovations create or bring with them challenges that require addressing, as predicted by the disruptions, ambiguities, innovations, and challenges model. Good planning includes identifying the challenges that arise from innovations and deciding whether—and how—to attend to them. Second, innovators inevitably overlook or miss details during planning, especially when they must manage disruptive events. During a disruption, point-of-need innovations, however imperfect, are

more beneficial than perfect actions developed over time. Third, change is cyclical. The work necessary to address the challenge of measuring the impact of the innovations in IL teaching instituted by the instructional team suggests several new and higher-order recurring ambiguities: How will the University Libraries define and measure success? What form or forms should IL instruction take moving forward? What innovations should the University Libraries retain for IL instruction within a changing COVID-19 context? Addressing these new ambiguities will guide the instructional team in identifying evaluation and assessment needs and related data collection needs in an informed manner.

Higher education will likely change due to innovations introduced during the COVID-19 pandemic. Given the return of face-to-face instruction to USD's campus in the fall 2021 semester, it is likely that the innovations associated with Zoom-based instrumental teaching will remain only in instruction provided to online students. Instructional innovations such as recording sessions for asynchronous use, which enabled the inclusion of online students in Freshman Writing's IL instruction, should be retained if possible. This suggests a new ambiguity: Should librarians continue to record instrumental IL research demonstrations for asynchronous use by face-to-face students? Ironically, removing the possibility of face-to-face students viewing asynchronous research demonstrations might put them at a disadvantage vis-à-vis online students. The instructional team endorses recording face-to-face sessions to ensure equity of instruction for all Freshman Writing students and will seek to continue this practice in future instructional design.

> **During a disruption, point-of-need innovations, however imperfect, are more beneficial than perfect actions developed over time.**

The instructional team introduced a modified embedded librarian model to replace the relational one-on-one instruction lost when IL teaching went online. The team urges that this model be retained in both face-to-face and online instruction. For face-to-face students, it can augment relational one-on-one IL instruction, offering students additional research assistance from librarians with whom they are familiar. For online students, the embedded librarian model provides the human interaction that is stipulated by the ACRL Distance Learning Standards and which students value, especially in times of social isolation like a pandemic. For librarians, this model offers the option of avoiding one-on-one interactions if they have pandemic-related health concerns.

> **The instructional team introduced a modified embedded librarian model to replace the relational one-on-one instruction lost when IL teaching went online. The team urges that this model be retained in both face-to-face and online instruction.**

Further advantages of this model include promoting a relationship between students and the library; offering more direct, personal research support; enabling improved

student writing assignments; and providing increased consultations with librarians that give rise to larger numbers of higher-order reference encounters.

Conclusion

It is a cliché that disruptions present opportunities as well as challenges. Major disruptions of the kind represented by the COVID-19 pandemic place both organizations and individuals under stress as they seek to restore services for their stakeholders. Examining traditional practices, identifying innovative adaptations or new ways of providing services, and addressing inequities made more salient by the pandemic offer opportunities for improvement rather than acceptance or mere survival. Combining several theoretical perspectives, the instructional team worked initially to sustain instruction, then designed and implemented teaching innovations. These innovations increased the number of students receiving IL instruction within Freshman Writing and expanded the number of students seeking reference assistance.

Theoretical perspectives should inform and guide planning, and they become especially relevant when dealing with disruptive events and their aftermaths. The theory of the strength of weak ties provides a way to understand and utilize relationships to spread instructional innovations. The disruptions, ambiguities, innovations, and challenges model offers a template by which organizations can understand and manage disruptions as well as plan for future events. Despite the return to face-to-face teaching in the fall 2021 semester, USD's instruction may need to shift back to online-only formats, given the rise of multiple variants of COVID-19. The University Libraries is well positioned to pivot quickly from face-to-face to online instruction using the innovations developed in response to the pandemic. Building on these successful innovations, the instructional team continues to leverage theoretical perspectives in making instrumental and relational instruction happen in both face-to-face and online environments.

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