E-Support for E-Learning: A Tool to Empower Students in Online Courses

Rhiannon Bettivia and Rebecca O. Davis
School of Library and Information Science, Simmons University, Boston, Massachusetts, United States

E-learning has increased through the years in MLIS programs, a trend that has been intensified during the COVID-19 pandemic. Some students choose to take online classes; others have been required to do so by the pandemic. This raises the question: Are students properly prepared to learn online? For this study, researchers created an E-Learning Guide with resources and tips for e-learning. Several sessions were offered during orientation for incoming graduate students in a Library and Information Science program in the northeast United States. During these sessions, the researchers reviewed the E-Learning Guide. Students were surveyed immediately after the sessions and at the end of the semester to learn what, if any, resources were useful. Based on the results, students appreciated having a synchronous session wherein the researchers reviewed the E-Learning Guide, having specific resources to use for e-learning, and having access to a guide with resources for e-learning.

Keywords: education, onboarding, online learning, student agency, students

Centering student agency in a crisis

The ultimate onus for good e-learning classes is on the teaching faculty. It falls to them to create content that engages and teaches, that reaches across the digital space, that addresses core course and programmatic goals, and that prepares students for success in their subsequent endeavors. Among its many impacts, the unprecedented global crisis occasioned by the COVID-19 pandemic forced students and faculty to move courses online, en masse and with little warning, shifting e-learning from the province of the often self-selected few to most students in the United States. For those programs without existing e-learning infrastructure, institutional focus was often on providing faculty with support in converting face-to-face (F2F) classes into virtual offerings. Simultaneously, students need their own tool sets to feel a sense of agency in the e-learning process (Usher & Pajares, 2008). Because most students will have spent the vast majority of their learning years in F2F environments with a "sage on the stage," they also need guidance on the mechanics of how to learn in online environments. This research examines a pilot project that provided concrete guidance for students taking online courses, with the aim of mitigating trepidation and anxiety caused by e-learning. These challenges were laid bare during the pandemic when online programs ceased to be an option and were temporarily the norm. The authors created a course- and program-agnostic tool set called the E-Learning Guide (https://slis.simmons.edu/blogs/elearningguide/) to aid students in maintaining agency in an unexpected learning environment. While the institution in this study has long-standing master's programs both online and F2F, COVID

KEY POINTS:

- The prevalence of e-learning is increasing, particularly during the COVID-19 pandemic, and students are often expected to arrive in e-learning spaces equipped with the mechanical skills to learn in non-traditional environments.
- Providing written materials in conjunction with live instruction that addresses the specific skills required to learn online, such as those that help structure work plans for asynchronous classes or develop routines to remain engaged in synchronous digital lectures, help students feel a sense of agency in digital classes.
- LIS programs can prime students for success by helping them to acquire e-learning mechanics prior to their taking any e-classes. This priming can help students manage their e-classes while also increasing satisfaction by demonstrating the care and social presence of the LIS program.

temporarily shuttered in-person learning and required all students to be online students. The E-Learning Guide provided students with steps for approaching asynchronous and synchronous courses in addition to recommendations for software and methods that assist with organization, motivation, and connection during online learning. This article will address the motivation for creating the E-Learning Guide, situated within literature in library and information science (LIS) and education about e-learning, and survey results from students who took part in an orientation session that introduced the E-Learning Guide. These research findings demonstrate that students appreciated having a synchronous session wherein the researchers reviewed the E-Learning Guide, having specific resources to use for e-learning, and having access to a guide with resources for e-learning.

Literature review: E-learning in LIS

For consistency, we will use the term *e-learning* to refer to the process of taking classes where the faculty and at least some students are not geographically co-located and where their interactions are mediated by digital technology. This could mean courses where faculty and students interact in real time via a video or audio platform such as Zoom, Microsoft Teams, Blackboard Collaborate, or others. Such courses are usually deemed *synchronous*. E-learning also refers to courses in which students engage with materials, such as pre-recorded lectures, web tutorials, and moderated discussion forums, on their own time and without live interaction. These latter courses are often termed *asynchronous* courses. Both such methods, as well as other combinations of synchronous and asynchronous pedagogy, fall under the larger category of e-learning, which is sometimes also called distance learning or online learning, among other terms. In using the term *e-learning*, the authors aim for expediency and are not advocating this term as preferable or exclusive of these other terms (Singh & Thurman, 2019).

E-learning programs have existed in LIS for more than two decades (Jackson, 2009). As a result, there is a considerable body of literature that examines topics under the umbrella of e-learning, such as student success and perceptions; conversion of F2F programs

into e-learning programs; use of moderated discussion forums; efficacy of asynchronous pedagogy; levels of interaction between students, programs, and faculty; and why students choose online programs. Findings conclude that not all students, even digital natives, come equipped to learn online, whether because of difficulties with learning management technology or because of the increased need for self-regulation in e-learning environments (Jackson, 2009; Burnett, Bonnici, Miksa, & Kim, 2007; Oguz, Chu, and Chow, 2015). As Burnett et al. (2007) note, "[t]echnology is just the medium" (p. 24). It is this role as medium, as infrastructure, that often makes it difficult to understand what education technology platforms are doing, and, more specifically, what they are doing for students and how they mediate interactions between student, faculty, and institution.

LIS-specific literature on e-learning points to a number of trends, in both the research about e-learning and the practices of teaching online courses. Generally, the literature indicates that asynchronous classes and programs are more studied than synchronous, while blended or hybrid courses seem to be the most successful in terms of satisfaction and student outcomes (Farooq & Matteson, 2017; Kazmer, 2007; Moreillon, 2015). Satisfaction is often measured from student self-reports, and outcomes are measured by grades and graduation rates. The audience for the interventions described in the literature is frequently teaching faculty: Discussions about increasing social presence, moderating discussion forums to achieve higher levels of understanding, or limiting group work are pedagogical steps that teachers can adopt (Dow, 2008; Moreillon, 2015; Stansberry, 2006). While explicit audiences are not often named, another target group of stakeholders for the LIS literature on e-learning is administrators. Recommendations about ways to increase student satisfaction or explorations about why students choose an e-learning program over a F2F program imply an audience of administrators looking to improve student outcomes or increase enrollment.

These trends repeat in non-LIS literature about e-learning. Studies such as Joosten and Custatis's (2020) work on student preparedness return to common themes such as organization, familiarity with technology, motivation, and socialization, among others, using quantitative methods to examine the impact of each factor on student success. This notion of online learning readiness appears frequently in both scholarly research about e-learning and existing e-learning guides for students found on academic/student advice sites and university websites (Indiana University, 2020; Joubert, 2020; Minnesota State CAREERWise, n.d.; Park & Yun, 2018; Sloan, 2013; Yu, 2018). Many other studies focus on student perceptions of their classes and their online programs overall (Baker & Moyer, 2019; Henry, 2020). A common concern in e-learning literature is the question of student retention, as online programs and e-learning courses specifically have measurably higher attrition rates compared to on-the-ground programs (Abdous, 2019a; Russo-Gleicher, 2014). Importantly, research by Russo-Gleicher (2014) and Guethler (2019) indicates that faculty and students find e-learning to be harder than traditional F2F learning despite the common misconception that e-learning is easier. That some institutions, pre-COVID, restricted e-learning to upper-level students or students with higher GPAs is an additional tacit acknowledgment of the challenges of e-learning.

Other studies focus on faculty and what they can and should be doing. The changes wrought by the COVID-19 pandemic have spurred the publication of articles on the importance of e-learning (Alqahtani & Rajkhan, 2020; Henderson, Houston, Peterson, Shakeel, & West, 2021). The majority of the recommendations and findings are aimed at interventions that can be made on the part of the faculty, in terms of moderation approaches in asynchronous forums or distance socialization faculty can engage in and foster for students (Banas & Wartalski, 2019; Miller, MacLaren, and Xu, 2020; Park & Yun, 2018). These recommendations make sense, as faculty ultimately engage in the most front-facing labor roles as experienced by students. Therefore, the faculty have a great capacity to create a more positive e-learning experience for students via pedagogical approaches. However, some scholars have argued that because e-learning takes more self-regulation than traditional F2F learning, one cannot overlook the roles that student self-regulation and self-efficiency play in both participant satisfaction and outcome (Banas & Wartalski, 2019; Shea & Bidjerano, 2012). Part of this calculation is student familiarity with the technologies that undergird e-learning. The frequent assumption is that younger students, so called "digital-natives," would be able to transfer their digital skills in areas such as social media to the learning environment, but research on e-learning success demonstrates that age does not play this kind of role in who succeeds in learning online (Abdous, 2019a, 2019b; Gasser & Palfry, 2008). Rather, Abdous's research demonstrates the importance of academic self-efficiency, or ASE, including how students feel about their online classes and how well they feel able to navigate the technologies used to create the e-learning experience. Part of this stems from the recognition that some external factors that affect student success in e-learning, such as family/work/life commitments and a student's individual readiness to manage the higher cognitive load and self-regulation needed for e-learning courses, are difficult for academic institutions to both measure and influence (Guethler, 2019).

The original provocation for the authors' E-Learning Guide pilot project was simple, driven by the exigencies of the COVID-19 pandemic. The authors sought to create a how-to guide that functioned in a manner similar to Miriam Sweeney's (2012) ubiquitous and timeless guide to reading in graduate school. The E-Learning Guide would present concrete tips for students, constructed in response to anecdotal stories that faculty were sharing about students who claimed they could not learn in e-learning environments; these anecdotes touched on their own students as well as on friends and family members who were in educational programs. The Guide took shape at its current scale, a program-level intervention rather than part of any individual class, when it became clear that the best structure at the authors' institution for reaching large numbers of students was to present the materials as part of the new student orientation/welcome program. Existing literature on program-level interventions in e-learning details what kinds of things students like about e-classes: less group work or the ability to take classes without relocating, for example (Dow, 2008; Oguz et al., 2015). The literature focuses less on what supports can be put in place to help students adapt to the online learning environment in general, once enrolled, and how programs can scaffold[1] student entry into e-learning environments. This research seeks to begin addressing this gap by exploring student preparedness and helping students to cultivate their self-motivation and self-efficiency in a way that supports the growth of

their mechanical skills, their capacity for taking online classes, and managing their digital presence in schooling and professional environments. In non-LIS literature, a body of work examines the impact of online learning orientations (OLOs) and what impacts these have on student success. Research into OLOs in e-learning environments frequently centers self-paced, asynchronous programming (Alperin, Gaydos, & Phillips, 2020; McGowan, 2018; Sanute & Butt, 2019). OLOs offer modules on topics ranging from simple technical skills like logging in to the learning management system (LMS) to mocking up work schedules for a sample syllabus for time management practice (Alperin et al., 2020; van Rooij & Zirkle, 2016). OLO programs range from voluntary, where students elect to attend some events, to credit-bearing, where students receive transcript hours for participation. Qualitative feedback from faculty suggests that these programs should be mandatory (Russo-Gleicher, 2014).

These OLOs fall under the larger, umbrella category of student onboarding. Within the context of higher education programs, student onboarding helps socialize students in the program and institutional environment. Onboarding consists of multiple, on-going sessions, events, and supports, including items such as orientations, welcome days, and preparatory programs. Onboarding teaches students about what to expect of a new program of study; how to adjust to the new learning environment; the expectations the program has of them; the experiences of other current students and alumni; how to find and access courses, resources, and services on campus; program selection; and post-program career/graduate school guidance. Such sessions provide a plethora of information to prepare students for beginning a program, and often much more (Complete College America, 2020; Jenkins, Lahr, and Pellegrino, 2020). The majority of orientations for new students take place at the beginning of the semester and can lead to information overload due to the sheer amount of content covered in a relatively condensed period of time (Sandoval-Lucreo, Antony, and Hepworth, 2017). Additionally, orientation sessions usually include introductions to several services on campus that may not coordinate and can lead to students having to go to multiple areas to get answers to their questions (Jenkins et al., 2020; Richards-Schuster, Ruffolo, and Hiltz, 2019). While programs at universities and colleges prepare for orientation, some institutions are rethinking and redesigning the onboarding process for students to expand beyond the traditional scope of orientation, in part to cut down on information overload. The need to change onboarding is obvious, and several institutions have taken steps to make improvements for students (Complete College America, 2020). The larger outcomes for changing student onboarding are to help students be better prepared to navigate their journey as students with the proper assistance (Richards-Schuster et al., 2019). For higher education institutions, student onboarding should provide students with the tools and services needed to learn how to be undergraduate and graduate students (Kopko & Griffin, 2020).

In terms of scale and the topics covered, the E-Learning Guide is akin to some of the OLOs and onboarding measures. What makes it different is the focus on mechanical skills to support students in becoming online students. This approach borrows from some existing research in covering topics like the challenges associated with scheduling and time management, but goes into further specifics about how to approach different types of

e-learning courses. In the following section, the authors discuss the motivation and approach for creating the E-Learning Guide.

Method: New ideas built for e-learning

In the spring of 2020, the COVID-19 pandemic required rapid changes to learning environments. While the authors' institution has a long-standing asynchronous online degree program, participation in e-learning classes was previously voluntary. The pandemic moved all classes online for approximately four-and-a-half terms (partial spring 2020; summer and fall 2020; spring and summer 2021). Against this backdrop, the authors embarked on a project to aggregate and curate existing e-learning resources to help students manage this new academic experience. Many institutions and e-learning companies had e-learning guides that predated the pandemic, and many more created such resources in response to the unexpected move online during COVID shutdowns.[2] At the outset, the authors began by looking at these resources to see if there were already tools that were fit for purpose or if one could be fashioned from a combination of existing resources. Early in the pandemic, web searches for e-learning tips and guides, including synonyms such as "online learning" and "distance learning," yielded guides by universities and colleges as well as guides from companies that provide educational advising services; online courses and certificates; and education marketing companies. The guides took the form of text-based websites, quizzes, and YouTube videos. These existing guides were often designed for students contemplating online classes, and many included self-checks meant to prepare students for e-learning by assessing their skills in areas like time management and self-motivation (see Minnesota State CAREERWise, n.d.). Such guides pre-dated COVID-19 and covered recurring themes including the challenge of staying motivated, making connections with peers and faculty, staying organized, and time management. Guides suggested software programs, productivity methods, and approaches to arranging work space. However, suggestions from pre-COVID guides were frequently impractical under pandemic conditions. First, the many sites that had guides or quizzes meant to enable students to assess whether they were ready for e-learning were largely moot: During the pandemic, most students did not have the option of F2F classes. Recognizing the impact of ASE and students' feelings about their competence on their experience in an e-class, the authors felt that quizzes/sites that might indicate a student was not ready for e-learning would be counterproductive in a time where e-classes were not optional. Second, guides included suggestions such as plugging into ethernet for connectivity stability; working while children are away in school; dedicating a home office; major purchases like new computer equipment, desks, and chairs; smaller purchases like office accessories including cheerful decorations; and working in libraries and cafés to change scenery. Such suggestions appeared off-putting during the pandemic, when many students were working on small gadgets without ethernet ports; when children's schools were closed and caregivers were dealing with lack of access to respite care; when people were sheltering with others in non-ideal physical setups; when affordable computers and office supplies were difficult to acquire because of supply-chain disruptions; and when many students were struggling with loss of income. Finally, the guides often name-checked challenges with motivation and time management but lacked concrete tips about how to

manage these challenges. This project was not started as a response to COVID-19 but rather as a tool to provide students with more realistic tips and advice for taking online courses under any circumstances.

Consequently, the authors concluded that there was not an existing tool that would serve the desired purposes. The authors created a text-based web guide that highlights some basic mechanics of online learning, drawing from existing popular and academic literature, while ensuring that suggestions would work with many of the pandemic-era circumstances students were facing. The authors decided the E-Learning Guide would offer concrete steps to approaching the challenges of staying motivated and organized for online courses. The E-Learning Guide speaks to specific skills for asynchronous and synchronous courses, recognizing the differential outcomes from these different approaches as illustrated in the literature (Farooq & Matteson, 2017). The materials were first aggregated into a space within the LMS provided by the institution; however, institutional technological limitations meant that students are not guaranteed persistent access to LMS-based materials. Thus, the content was migrated to a publicly available WordPress site. The additional benefits of this change were that the Guide is now both low-bandwidth and open access, meaning people outside the program and institution could access the Guide, as could those with limited internet connectivity or those working with smaller internet-enabled devices (phones and tablets instead of laptops and computers). Faculty unaffiliated with the authors at other institutions and in other countries have reported sharing the Guide with students by linking to it in LMS and syllabi. One student in a live session shared that these resources were helpful to their high school-aged child, who was also dealing with e-learning during the pandemic.

Given the stressful nature of the pandemic crisis, the site was designed to be calming and features a gif that acts as a breathing regulator, a feature that students noted in surveys they used throughout subsequent semesters. The Guide begins with an acknowledgment of the added stressors of the COVID-19 pandemic and follows with sections on best practices for taking asynchronous and synchronous classes, as well as general university socialization tips. Best practices include suggestions for staying on top of course work for different types of work time availability, such as tips for those who work in short snatches of time and separate recommendations for those who do all their coursework on a single day of the week. For those in courses with live video or audio components, the Guide includes tips about how to care for physical health while sitting through long videoconference sessions. The site also includes separate sections with a list of websites and software applications to help with things like scheduling, note taking, motivation, and distraction minimization; a section with short YouTube-based videos on creating work habits to do schoolwork at home; and a section with links to articles about e-learning tips.

In addition to creating the WordPress site, the authors conducted video Zoom sessions where they presented the materials contained in the E-Learning Guide to students (see Figure 1). The format of these sessions was largely read-aloud: Two faculty read through the various sections of the Guide, highlighting the types of materials contained therein and some examples. These live sessions covered the following topics:

- an acknowledgment of the conditions of learning during COVID;

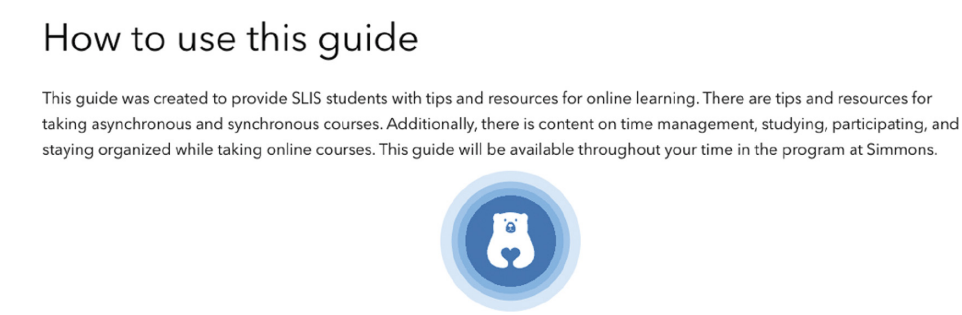

Figure 1: A screenshot of the E-Learning Guide
Note. The rings on the bear figure expand and contract to provide a guided-breathing tool. Bear animation credit: Yashinta Tania Putri and Nadia Putri Nabila, https://lottiefiles.com/22223-bear-calm-breathing

- tips for taking asynchronous classes;
- tips for taking synchronous classes;
- general learning best practices;
- suggestions for staying connected and managing isolation;
- an overview of tools, videos, and articles to help with time management, organization, and motivation; and
- common scenarios that come up in e-classes, and faculty perspectives on how to deal with them.

Students registered to attend the live sessions and were sent a survey after the sessions. Additionally, participants from fall 2020 and spring 2021 were surveyed in January 2021 and May 2021, respectively, to assess the usefulness of the Guide and the live session after a full semester of e-learning. The surveys assessed student feelings about e-learning, the E-Learning Guide, and their experiences with an all-online semester, taking their overall comfort with traditional F2F learning environments as a baseline. Feedback from fall 2020 was used to make updates to the Guide and live session for spring 2021. This research is inductive in nature and seeks to address the following research questions:

RQ1: How do students feel about e-learning during the current COVID-19 pandemic?
RQ2: What tools are and are not helpful in helping students to feel empowered to manage their own e-learning experience?
RQ3: What types of tools and systemic support can a university provide to give students a sense of agency in relation to fully online learning experiences?
RQ4: How do tools or supports impact a student's perception of their e-learning experience?

This study is important because many supports that exist for online instruction take the form of academic studies aimed at faculty engaged in curriculum development; workshops and webinars by universities and private companies to help develop online teaching practice;

and student how-to guides from popular e-learning websites or university websites. Most research is not aimed at students, and many guides are not optimized for COVID-19. The authors hypothesized that by providing students with concrete tools to address the most commonly mentioned critical issues for students in e-learning (time management and motivation) and by providing them an environment for expressing their concerns and hearing their anxieties validated by faculty (the live sessions that accompany the Guide), it would be possible to provide a measure of agency to students that would improve their perception of the outcome of an unanticipated semester of online study. This research constitutes a pilot study for future work related to onboarding e-learning students.

This pilot was conducted with new students in a two-year[3] graduate professional program in library and information science at Simmons University, a small, private, urban liberal arts college. The population of the program is predominantly White/non-Hispanic; as of fall 2019, students self-reported as 4.2% Asian/Asian American, 1.4% Black/African American, 0.2% Hawaiian/Pacific Islander, 5.6% Hispanic/Latinx of any race, 1.1% other, 4.2% two or more races, 79.7% White (non-Hispanic/Latinx), and 83% White of any ethnicity.[4] The population is predominantly female: incoming students in spring 2021 self-reported as 78.6% female, 17.9% male, and 3.6% not reported. New students entering the program in fall 2020 and spring 2021 were offered the opportunity to attend a live video conferencing session introducing the E-Learning Guide as part of welcome week activities. Approximately 30–40% of incoming students attended at least one of the welcome week sessions; over the course of this study, the 279 students matriculated in the fall and 113 in the spring. Of these, 75 students attended voluntary sessions introducing the e-learning guide. Of those 75 students, 47 students started surveys about their experience with the guide and the live sessions; 42 completed a survey. Students were asked a mixture of Likert-scale questions about their comfort with two main types of e-learning structures: synchronous/hybrid online courses and asynchronous online courses. In this case study, the synchronous and hybrid courses consisted of materials such as syllabi and readings shared through an LMS (Moodle) and required live sessions conducted via online video conferencing (Zoom). Asynchronous courses were conducted entirely via Moodle and made heavy use of pre-recorded videos (Panopto); instructors in asynchronous courses are forbidden to require attendance at live Zoom events, although many instructors offered non-mandatory live sessions for particular topics. Because all courses were online during the course of this research project due to the COVID-19 pandemic, students were also asked about whether they had intended to engage in e-learning courses prior to the onset of the pandemic.

Results: Potential impact and significance

A total of four surveys were conducted over the course of two semesters. These surveys evolved over time to address changes related to the pandemic situation, and in response to answers given in previous surveys and response rates. No incentive was given for survey participation. Table 1 contains the results of the Likert-scale questions that appeared in some of the pilot surveys.

Table 1: Quantitative survey results

Question	Surveys	# Respondents	Answer choices	Responses
Have you taken an online class before?	1, 3	17	Yes No	9 8
Before the current health emergency, did you anticipate taking an online course this semester?	1, 3	17	Yes Maybe No	7 4 6
How do you feel about taking online asynchronous courses?	1, 2, 3, 4	37	Very comfortable Somewhat comfortable Neutral Somewhat uncomfortable Very uncomfortable	8 10 5 13 1
How do you feel about taking online synchronous or hybrid courses?	1, 2, 3, 4	34	Very comfortable Somewhat comfortable Neutral Somewhat uncomfortable Very uncomfortable	10 15 6 3 0
How do you feel about taking in-person courses during a non-COVID emergency?	1, 3	17	Very comfortable Somewhat comfortable Neutral Somewhat uncomfortable Very uncomfortable	12 1 1 2 1
Do you feel _____ about online courses after a semester fully online?	2, 4	21	Same as before Better Worse Other	4 15 1 1
Did you use any resources from the guide? Did you find anything useful in the guide?	1,2,3,4	43	Yes No	39
Did you find the resources helpful for e-learning?	1,2,3,4	27	Yes Maybe No	20 5 2
Were the live sessions helpful?	1,3,4	22	Yes No	20 2

RQ1: How do students feel about e-learning during the current COVID-19 pandemic?

Survey results showed that most of the students were either unsure about e-learning or not planning to take online classes before the pandemic, while the overwhelming majority expressed high levels of comfort in F2F learning environments. Students were more uncomfortable with the prospect of asynchronous courses than synchronous/hybrid courses. The results from this study show that while some students felt uncomfortable about taking online courses (asynchronous and synchronous), attending a session where the faculty researchers

went over the E-Learning Guide did provide students with resources they could use for taking online courses.

Additionally, students were able to identify resources that they could use for organization, time management, and so on. Not surprisingly, loneliness was identified as a concern for students taking classes online, and worries about isolation came up repeatedly. One student pointed out the limitations of technology in noting that there is "no app" to cure isolation and loneliness. In response, the authors have continued to add non–app-based connectivity suggestions to the E-Learning Guide, focusing on study groups and e-participation in campus clubs. At the authors' institution, participation in student groups was traditionally limited for non-local students. The reorientation of such groups during the pandemic enabled some student groups to explore ways to include more participants online. As the COVID-19 pandemic leads to a new normal, it remains to be seen how helpful such suggestions are in mitigating the isolation some e-learners experience; similarly, as clubs and professional association groups return to in-person activities, they will need to navigate a hybrid space between local and non-local students.

Despite the challenges and anxiety occasioned by pandemic shifts, most students felt better about the prospect of e-learning after the end of one fully online semester. Furthermore, several reported actively thinking about how to approach future e-classes.

RQ2: What tools are and are not helpful in helping students to feel empowered to manage their own e-learning experience?

In surveys, students shared the tools and supports that they found helpful from the E-Learning Guide. These included

- Outlook/calendars;
- study tips;
- mental health tips;
- tips on how to do asynchronous classes online;
- [Pomodoro method] timer;
- OneNote (note-taking app);
- Momentum (distraction minimizing/productivity app);
- Lucid Chart (visualization/chart making app);
- navigating the differences between synchronous and asynchronous classes;
- suggested videos;
- suggested articles/websites, e.g., Renstrom (2015), Sweeney (2012);
- the aggregation of helpful apps;
- OneTab (distraction minimizing app);
- Forest (distraction minimizing app);
- the [breathing] bear [gif]; and
- a single website that contains links to all these tools.

Although the surveys gave room for students to express what aspects of the Guide and live sessions were not helpful (questions with no/maybe/other options and follow-up short response prompts), no respondents utilized these options. Most students who answered

survey questions expressed positive affect toward the Guide and live sessions, and the authors acknowledge that this is a selection bias, as people with positive feelings toward the Guide were more likely to respond to the survey than those who did not use it, given the lack of incentives and the optional nature of the live sessions.

RQ3: What types of tools and systemic support can a university provide to give students a sense of agency in relation to fully online learning experiences?

The overall goal of this pilot project was to provide students with a tool that would enable them to take some charge of their own learning experiences in a time when pandemic conditions stripped students of some of the agency they normally have in choosing course modalities. When students were forced online, this agency was lost. While the surveys did not ask questions specifically about agency, the responses to numerous questions address this issue. The surveys suggest that a significant proportion of respondents were not planning to take e-classes before the university announced that its terms would be fully remote during the 2020–21 academic year. In the end-of-term follow-up surveys, students were asked how they were preparing for future semesters of e-learning and what they would do differently after a full semester of e-learning experience in their current graduate professional program. The free text answers hint at the common difficulties students face when engaging in e-learning. Students reported future approaches such as "More organized note taking, better self scheduling"; "I am re-thinking my physical area, mostly. Getting a cushion for my chair, thinking about back support!"; and "getting familiar with software programs." One student noted,

> Definitely planning ahead more. I think setting interim deadlines and sticking to them was a challenge for me this semester. Procrastination was a huge barrier to productivity without spaces like the library to keep me accountable. I am going to try to get in touch with a study-buddy for accountability. Also, going to professor's office hours more might have helped. Group projects were helpful since they did keep me accountable to a great degree. I think periodic reviews of the e-learning guide would be helpful, especially nearing the end of the semester with final projects.

After a full semester of e-learning, another student was looking very specifically at their plans for the upcoming term, saying, "I am trying to plan ahead, but none of my classes have provided any information yet so that makes planning hard. I am taking three asynchronous classes this semester, and so I'm very worried about isolation and school consuming my life. The latter I had hoped to fix by planning ahead. The former I am trying to work out a plan to study frequently with my friends from college to help mitigate isolation. I am hoping that [student] organizations ... will be more active this semester as well." This quote points to the lack of agency students have been experiencing as e-learners during COVID. That students specifically name-check the E-Learning Guide and the tools it recommends as ways to prepare themselves and their personal physical and social environment demonstrates that the E-Learning Guide helps them cope with and manage those extrinsic success factors of home life and motivation that institutions and faculty struggle to account for in working toward student success, satisfaction, and self-efficiency (Guethler, 2019).

RQ4: How do tools or supports impact a student's perception of their e-learning experience?

A key finding of the pilot was the benefits of hosting live sessions to walk students through the resources for e-learning. While the institution provided such live guidance around general university services, in the form of welcome week sessions covering topics like picking a concentration of study, accessing university resources like the office of accessibility services, or where to turn for library or technical support, any guidance on how to be an e-learner previously took the form of an asynchronous LMS space. While some students may prefer e-learning, or, in the case of COVID-19, when there is no other option, students benefit from some synchronous sessions or tutorials where both staff and faculty provide advice, tips, and resources. These interventions do not have to be costly or complicated. In this pilot, the faculty in live sessions read select content from the E-Learning Guide aloud to students and students responded positively. Students said, "It was great to have someone talk about the resources—and then have them written out as well so that we could re-visit points and links" and "putting all that I'd read into context verbally" was helpful in preparing to start e-learning. Students noted that the live session where faculty acknowledged the challenging reality of the current situation helped them to feel like faculty were there for the students and aware of what students were facing: One student noted, "I thought it said a lot about the attitude of the instructors at the institution during the pandemic and instantly made me feel very supported and welcome." Live sessions also covered common e-learning scenarios that were gathered from anecdotal feedback from students and faculty. These scenarios included missing little posts and labs in asynchronous courses and the perceived awkwardness around attending digital office hours. One student said in response that it was helpful, "to hear how normal anxiety is about keeping up with assignments." Another pointed out that hearing about office hours was "visceral" and it would help them approach faculty in future. This finding was significant especially when viewed alongside the many students who name-check going to office hours more frequently as part of their plans for a better future e-learning experience in survey short-response questions.

Future work section and conclusion

The E-Learning Guide aims to support students' e-learning skills regardless of the specific content of an individual class, while simultaneously maintaining a focus on students as learners rather than as imagined digital natives or consumers. The program-level approach that centers mechanical skills not only provides students with tools to foster their agency and self-efficiency; it also has the potential to benefit faculty who, increasingly, are asked to do more with less. Educational concerns are meta-concerns: They happen in the fields of education, pedagogy, and teaching, and within every other academic discipline. Aggregating the findings and best practices across multiple academic disciplines is challenging as a result. Previous e-learning research, and the resultant pedagogical recommendations, was often aimed at specific classes and content areas. This disperses the ways in which students can gain the skills to be effective e-learners and online workers and leaves students reliant on the e-classroom practices of individual instructors. This approach to teaching e-learning mechanics has material impacts on learning time when faculty must re-teach technological

and e-learning skills within each individual class, resulting in a partial and fragmented experience for students. Removing some of this mechanical work from within classes opens time for important skill and community building.

Further, even within a single program of study, different faculty will rely on different types of technology to support learning in both e- and F2F classrooms. The rush to create online learning provisions in the wake of the COVID-19 pandemic intensified this deployment of large numbers of educational technologies, with classes suddenly requiring the use of several digital tools all at once, such as LMS like Moodle, Canvas, and Compass; social/communication tools such as Slack and Discord; communal annotation tools like Perusall and Hypothes.is; white boarding tools like Miro and MURAL; video conferencing tools like Zoom, Skype, and Blackboard; and video-making and -sharing tools like YouTube, Panopto, and even TikTok. Teaching students to navigate and integrate instructional technologies is a need that will persist beyond the pandemic as these tools become permanently embedded into learning processes.

COVID-19 did not create the challenges associated with the often unreflexive incorporation of tools and apps into learning environments. The pace and scale of pandemic-related changes laid bare the many e-learning issues that still need systematic research and solutions. COVID-19 highlights many issues that have been ignored in terms of inadequacy of approaches to e-learning. The E-Learning Guide was created out of a larger need for better tools to help students taking courses online rather than simply as a response to COVID-19. Furthermore, this research represents a pilot at a single institution. As such, it includes limitations stemming from both the small number of respondents as well as the limited demographic representation of students at the researchers' institution. Insufficient onboarding exacerbates existing challenges to racially and financially minoritized populations, regardless of prior academic preparation (Goyette & Mullen, 2006; Porter & Umbach, 2006). Simultaneously, retention rates in online programs tend to be lower than traditional F2F programs, irrespective of population (Russo-Gleicher, 2014; Stocker, 2018); retention rates between online and F2F students at the authors' institution varies from near parity in some years to a 23% gap in other years, with online students always having the lower retention rate. The role of scaffolded instruction on the mechanics of e-learning deserves further attention as a possible corrective to retention rates.

This project began as an expedient to help students during an unprecedented crisis. It quickly became a pilot for broader research on effective graduate student onboarding that will teach students to be e-learners. Most students will have come from formal learning environments that included explicit instructions on how to be a student, for example early childhood education programs that teach children the mechanics of writing with a pencil or sitting with peers on a rug. This type of explicit instruction is much less common for teaching students how to be online students, even though the literature suggests that e-learning brings with it many challenges that students cannot automatically address with existing learning or technological skills. One finding from this pilot was the benefit of live instruction that structured student interaction with support materials. Frequently, the default for online orientations has been asynchronous. For example, the University of Michigan School of

Social Work implemented massive open online courses (MOOCs) as part of the school's orientation for graduate students, which then functioned as a course designed to attract a global audience interested in understanding and learning about the foundations of social work practice in the United States (Richards-Schuster et al., 2019). The perceived benefits of the flexibility of asynchronous education abounds, yet the lack of structure in such environments is an acknowledged challenge, borne out by the anxiety students expressed about asynchronous courses in particular in the pilot surveys. In Complete College America's 2014 report, psychologist Barry Schwartz notes, "Smart institutions aiming to increase completion will offer students choice, to be sure. But the choice will be within well-defined limits, or constraints, so that the path to success is clearly marked" (Complete College America, 2020). Future research must examine how light-touch human interventions, such as the read-aloud of resources, can impact student success and satisfaction. The pilot suggests a distinct benefit arises from this fairly low-cost solution. Such avenues deserve further exploration as colleges recover from the financial hit that many suffered through as a result of the pandemic.

This study shows that LIS educators need to rethink preparation for online students. What knowledge do students have about e-learning? Where are the gaps in learning? How can LIS programs adjust their graduate student onboarding processes to adequately scaffold for the needs of their students? Currently, there is insufficient literature addressing these questions, and they are legitimate questions especially since the prevalence of e-learning continues to increase. The goal of this research is to create a tool to help to address some of the anxiety that students may have about e-learning, provide useful resources about e-learning, and provide tips and advice for faculty and LIS programs. While more research is needed, this work suggests that LIS programs can prime students for success by helping them to acquire e-learning mechanics prior to their taking any e-classes. This priming, via the Guide in conjunction with live sessions, not only sets students up to do better in managing their classes but also increases satisfaction by demonstrating the care and social presence of the LIS program.

Rhiannon Bettivia is an assistant professor of Library and Information Science at Simmons University. She teaches in the areas of digital stewardship, media preservation, and metadata. Her research blends information science with media, heritage, and cultural studies. She examines how political and governance concerns are built into technological infrastructures with a focus on digital cultural heritage, video games, semantic web platforms, and e-learning. Current research interests include digital preservation of AV media; heritage metadata aggregation projects; the intersection of cultural and finance metadata; digital provenance workflows and education; and platforms and pedagogy for digitally-mediated education. Email: rhiannon.bettivia@simmons.edu

Rebecca O. Davis is an assistant professor in the School of Library and Information Science at Simmons University. Her research is under the umbrella of diversity issues in academic libraries. Her publications can be found in the *Journal of Education in Library and Information Science*, *The Journal of Academic Librarianship*, *the Journal of Library Administration*, and *New Library World*. In 2020, she received a Laura Bush 21st Century Library Program grant from the Institute of Library and Museum Services (IMLS) for her project *African American Undergraduates' Use of Academic Libraries*. She teaches user services courses. She is also a member of several professional associations, including ALA, ALISE, and BCALA. She currently serves as chair of ALA's Library Instruction Round Table (LIRT) Awards Committee. Email: rebecca.davis@simmons.edu

Notes

1. In this context, scaffolding, whether in brick-and-mortar settings or e-learning, begins with understanding students' prior knowledge and meeting them where they are, contextualizing their learning, and providing them with relevant tools and structure to teach desired content-based outcomes. Specifically, scaffolded e-learning aids teachers in meeting learning targets while fostering progressive, active engagement and self-driven learning.
2. See, for examples:
   - student tips at elearningindustry.com
   - faculty tips at Colgate University's teachwhereyouare.colgate.edu
3. 71% of students complete their degree in two to three years at the authors' institution.
4. From https://www.simmons.edu/academics/colleges-schools-departments/schools-departments/slis/about/diversity-inclusion.

References

Abdous, M. (2019a). Well begun is half done: Using online orientation to foster online students' academic self-efficacy. *Online Learning*, *23*(3), 161–187. https://doi.org/10.24059/olj.v23i3.1437

Abdous, M. (2019b). Influence of satisfaction and preparedness on online students' feelings of anxiety. *The Internet and Higher Education*, *41*, 34–44. https://doi.org/10.1016/j.iheduc.2019.01.001

Alperin, M., Gaydos, L., & Phillips, J. (2020). The role of orientation programs to prepare students for online learning: A case study from an executive MPH program. *Pedagogy in Health Promotion*, *6*(4), 239–245. https://doi.org/10.1177/2373379920953375

Alqahtani, A. Y., & Rajkhan, A. A. (2020). E-learning critical success factors during the COVID-19 pandemic: A comprehensive analysis of e-learning managerial perspectives. *Education Sciences*, *10*(9), 1D+. https://doi.org/10.3390/educsci10090216

Baker, K. Q., & Moyer, D. M. (2019). The relationship between students' characteristics and their impressions of online courses. *American Journal of Distance Education*, *33*(1), 16–28. https://doi.org/10.1080/08923647.2019.1555301

Banas, J., & Wartalski, R. (2019). Designing for community in online learning settings. *Library Technology Reports*, *55*(4), 8–13. Retrieved from https://journals.ala.org/index.php/ltr/article/view/6999/9495

Burnett, K., Bonnici, L. J., Miksa, S. D., & Kim, J. (2007). Frequency, intensity and topicality in online learning: An exploration of the interaction dimensions that contribute to student satisfaction in online learning. *Journal of Education for Library and Information Science*, *48*(1), 21–35. Retrieved from http://www.jstor.org/stable/40324318

Complete College America. (2020). Shared beliefs and practices for putting purpose first in American higher education. Retrieved from https://files.eric.ed.gov/fulltext/ED594355.pdf

Dow, M. J. (2008). Implications of social presence for online learning: A case study of MLS students. *Journal of Education for Library and Information Science*, *49*(4), 231–242. Retrieved from http://www.jstor.org/stable/40323753

Farooq, O., & Matteson, M. (2017). Opportunities and challenges for students in an online seminar-style course in LIS education: A qualitative case study. *Journal of Education for Library and Information Science*, *57*(4), 271–282. https://doi.org/10.12783/issn.2328-2967/57/4/2

Gasser, U., & Palfrey, J. (2008). *Born digital-connecting with a global generation of digital natives*. New York, NY: Basic Books.

Goyette, K. A., & Mullen, A. L. (2006). Who studies the arts and sciences? Social background and the choice and consequences of undergraduate field of study. *Journal of Higher Education*, *77*(3), 497–538. Retrieved from https://www.jstor.org/stable/3838699

Guethler, A. (2019, March). A mixed methods research proposal to examine the influence of external factors and expectations on the success of first-time online learners. Society for Information Technology & Teacher Education International Conference (pp. 454–459). Association for the Advancement of Computing in Education (AACE). Retrieved from https://s3.amazonaws.com/aace-conf-media/conf/site/submission/uploads/site2019/paper_54608_3088.pdf

Henderson, M. B., Houston, D., Peterson, P. E., Shakeel, M. D., & West, M. R. (2021). Amid pandemic, support soars for online learning: Results from the 2020 Education Next survey of public opinion. *Education Next*, *21*(1), 6–16. Retrieved from https://www.educationnext.org/amid-pandemic-support-soars-online-learning-parent-poll-shows-2020-education-next-survey-public-opinion/

Henry, M. (2020). Online student expectations: A multifaceted, Student-centred understanding of online education. *Student Success*, *11*(2), 91–98. https://doi.org/10.5204/ssj.1678
Indiana University. (2020). Tips for online learning: Strategies for success. Retrieved from https://keeplearning.iu.edu/tips/index.html
Jackson, C. (2009, May). Learning online: A report on distance education in LIS programs. *Library Worklife: HR E-News for Today's Leaders*. Retrieved from https://ala-apa.org/newsletter/2009/05/13/learning-online-a-report-on-distance-education-in-lis-programs/
Jenkins, D., Lahr, H., & Pellegrino, L. (2020). Redesigning community college student onboarding through guided pathways. Part 1: Rethinking new student onboarding. Community College Research Center, Teachers College, Columbia University. Retrieved from https://files.eric.ed.gov/fulltext/ED604992.pdf
Joosten, T., & Cusatis, R. (2020). Online learning readiness. *American Journal of Distance Education*, *34*(3), 180–193. https://doi.org/10.1080/08923647.2020.1726167
Joubert, S. (2020, March 24). How to be a successful online learner: 9 tips and strategies. Northeastern University. Retrieved from https://www.northeastern.edu/bachelors-completion/news/successful-online-learning-strategies/
Kazmer, M. M. (2007). How do student experiences differ in online LIS programs with and without a residency? *Library Quarterly*, *77*(4), 359–383. https://doi.org/10.1086/520995
Kopko, E. & Griffin, S. (2020). Redesigning community college student onboarding through guided pathways. Part 2: Student perspectives on reformed practices at two Florida colleges. Community College Research Center, Teachers College, Columbia University. Retrieved from https://files.eric.ed.gov/fulltext/ED604995.pdf
McGowan, V. F. (2018). An investigation into web-based presentations of institutional online learning orientations. *Journal of Educators Online*, *15*(2). Retrieved from https://files.eric.ed.gov/fulltext/EJ1186017.pdf
Miller, T., MacLaren, K., & Xu, H. (2020). Online learning: Practices, perceptions, and technology. *Canadian Journal of Learning and Technology/La revue canadienne de l'apprentissage et de la technologie*, *46*(1). https://doi.org/10.21432/cjlt27894
Minnesota State CAREERWise. (n.d.). *What makes a successful online learner?*. Retrieved from https://careerwise.minnstate.edu/education/successonline.html
Moreillon, J. (2015). Increasing interactivity in the online learning environment: Using digital tools to support students in socially constructed meaning-making. *TechTrends*, *59*(3), 41–47. https://doi.org/10.1007/s11528-015-0851-0
Oguz, F., Chu, C. M., & Chow, A. (2015). Studying online: Student motivations and experiences in ALA-accredited LIS programs. *Journal of Education for Library and Information Science*, *56*(3), 213–231. https://doi.org/10.3138/jelis.56.3.213
Park, S., & Yun, H. (2018). The influence of motivational regulation strategies on online students' behavioral, emotional, and cognitive engagement. *American Journal of Distance Education*, *32*(1), 43–56. https://doi.org/10.1080/08923647.2018.1412738
Porter, S. R., & Umbach, P. D. (2006). College major choice: An analysis of person–environment fit. *Research in Higher Education*, *47*(4), 429–449. Retrieved from https://www.jstor.org/stable/40197411
Renstrom, J. (2015, July 28). *How to talk to a professor: Explained by a professor*. Noodle. Retrieved from https://www.noodle.com/articles/how-to-talk-to-a-professor-explained-by-a-professor
Richards-Schuster, K., Ruffolo, M., & Hiltz, B. (2019). Innovation practices to prepare students for graduate school: Lessons from a social work MOOC. *Journal of Social Work Education*, *55*(2), 314–326. https://doi.org/10.1080/10437797.2018.1548986
Russo-Gleicher, R. J. (2014). Improving student retention in online college classes: Qualitative insights from faculty. *Journal of College Student Retention: Research, Theory & Practice*, *16*(2), 239–260. https://doi.org/10.2190/CS.16.2.e
Sandoval-Lucero, E., Antony, K., & Hepworth, W. (2017). Co-curricular learning and assessment in new student orientation at a community college. *Creative Education, 8*(10), 1638–1655. https://doi.org/10.4236/ce.2017.810111
Sanute, L., & Butt, J. E. (2019, June). Quest for success: Empowering online students at CU Denver. In Distance Learning Administration 2019 ANNUAL (p. 185). Retrieved from https://www.westga.edu/~distance/dla/pdf/2019-dla-proceedings.pdf
Shea, P., & Bidjerano, T. (2012). Learning presence as a moderator in the community of inquiry model. *Computers & Education*, *59*(2), 316–326. https://doi.org/10.1016/j.compedu.2012.01.011
Singh, V., & Thurman, A. (2019). How many ways can we define online learning? A systematic literature review of definitions of online learning (1988–2018). *American Journal of Distance Education*, *33*(4), 289–306. https://doi.org/10.1080/08923647.2019.1663082

Sloan, M. (2013). Tips for online learning: students who enroll in online courses will find these basic guidelines and tips valuable. *Principal Leadership*, *14*(4), 52–54.
Stansberry, S. (2006). Effective assessment of online discourse in LIS courses. *Journal of Education for Library and Information Science*, *47*(1), 27–37. https://doi.org/10.2307/40324335
Stocker, B. L. (2018). Transitioning from on-campus to online in a Master of Science Nursing program: A comparative study of academic success. *American Journal of Distance Education*, *32*(2), 113–130. https://doi.org/10.1080/08923647.2018.1443371
Sweeney, M. E. (2012, June 20). How to read for grad school. Retrieved from https://miriamsweeney.net/2012/06/20/readforgradschool/
Usher, E. L., & Pajares, F. (2008). Sources of self-efficacy in school: Critical review of the literature and future directions. *Review of Educational Research*, *78*(4), 751–796. https://doi.org/10.3102/0034654308321456
van Rooij, S. W., & Zirkle, K. (2016). Balancing pedagogy, student readiness and accessibility: A case study in collaborative online course development. *The Internet and Higher Education*, *28*, 1–7. https://doi.org/10.1016/j.iheduc.2015.08.001
Wildemuth, B. M. (2017). *Applications of social research methods to questions in information and library science* (2nd ed.). Santa Barbara, CA: Libraries Unlimited.
Yu, T. (2018). Examining construct validity of the student online learning readiness (SOLR) instrument using confirmatory factor analysis. *Online Learning*, *22*(4), 277–288. http://doi.org/10.24059/olj.v22i4.1297