» "An original idea. That can't be too hard. The library must be full of them."

– STEPHEN FRY

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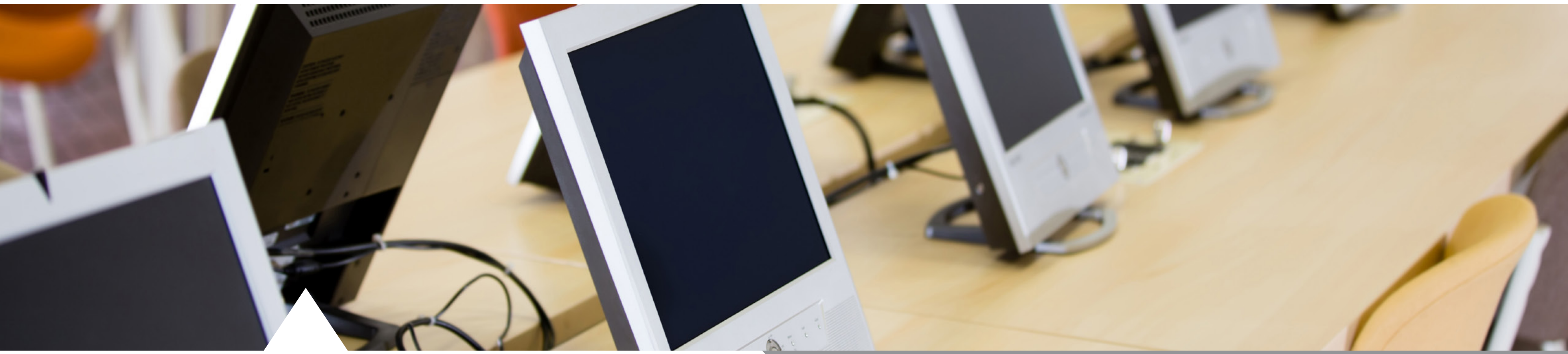

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Emotional Intelligence, Emotional Culture, and Library Leadership*

BY JASON MARTIN

INTRODUCTION

Emotional intelligence has been a hot topic in leadership since it was first written about almost 30 years ago. Emotional intelligence consists of four concepts: self-awareness, self- management, social awareness, and relationship management. Two of those parts self- awareness and self-management - are self-focused, and the other two - social awareness and relationship management - are other-focused. Emotional intelligence is what allows us to know and understand ourselves, control our actions, plan for the future, adapt to change, manage conflict, relate to and understand others, and build deep, meaningful relationships. Emotional culture is critical in dictating not just how emotions are expressed in the library workplace, but a healthy emotional culture prevents burnout, fosters innovation, and creates a better working environment. The article will provide an overview of emotional intelligence and its importance to library leaders. It will describe ways to develop each component of emotional intelligence and how to use emotional intelligence to influence the library's emotional culture.

OVERVIEW OF EMOTIONAL INTELLIGENCE

Intelligence - what it is and how to measure it - has been a long debated topic in psychology. Even researchers who agree with the prevailing theory of intelligence have posited for decades that human intelligence is more than just cognitive ability, and that other intelligences exist, particularly social intelligence. Howard Gardner proposed the idea of multiple human intelligences, two of which were interpersonal and intrapersonal intelligence.[1] A few years later, Salovey and Mayer coined the term emotional intelligence, which they defined as “the subset of social intelligence that involves the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions.”[2] They stated emotional intelligence consisted of three mental processes that included understanding and expressing one’s own emotions, managing emotions, and using emotions in positive and socially appropriate ways.

To Salovey and Mayer, emotional intelligence held a prominent role in our development as human beings. As we evolved and developed more cohesive social units, recognizing and understanding emotions in ourselves and others was critical. These same skills are still critical in our modern society as we engage in socially-approved ways to interact with our family, friends, coworkers, and strangers we encounter on the street. People who have developed emotional intelligence appear to others as “genuine and warm”; however, those who lack emotional intelligence come off as “oblivious and boorish.” Emotionally intelligent people can communicate and understand emotions verbally and non-verbally, and they are better at making future plans with multiple outcomes, developing unconventional ideas, drawn to problems of a greater importance in a crisis, and understand what motivates them.[3] Daniel Goleman popularized the concept of emotional intelligence with his book *Emotional Intelligence*. His original framework consisted of five parts: self-awareness, self-regulation, motivation, empathy, and social skills. Goleman refined his framework and definition the more he researched and wrote about emotional intelligence, and his five part framework morphed into 2X2 model of self- awareness, self-management, social awareness, and relationship management.

EMOTIONAL INTELLIGENCE AND LEADERSHIP

Leadership is emotional. Research has found organizational leaders have 85% of competence in emotional intelligence, beating out cognitive and technical skills. In fact, emotional intelligence is so critical for leaders it holds twice the importance that technical skills do.[4] Organizations base promotion to leadership positions on the candidates’ emotional intelligence, and leaders with higher emotional intelligence are rated as being better leaders.[5] Emotionally intelligent leaders excel at many things, but perhaps their most important skill is the ability to effectively facilitate change in an organization. Their ability to recognize, manage, and influence emotions helps make those in the organization more responsive to and comfortable with the change taking place.[6] Leaders with low emotional intelligence are not effective leaders, and their organizations fail to innovate and perform at the levels needed to be successful. Library leaders can learn and benefit a great deal from developing and using their emotional intelligence.[7]

OVERVIEW OF EMOTIONAL CULTURE

Emotional culture - the emotions displayed and the norms around displaying emotions - are just as important to a library as the cognitive culture. The emotional culture dictates how people respond to each other and to leadership, and organizational leaders can play a big part in shaping this culture. The emotions they exhibit - even in unintentional ways - help set the emotional tone of the library. Organizational culture is the shared values, norms, and accepted behaviors of the organization. The term is most often used when describing what work is performed and how it is performed in an organization, but emotional culture is just as important. Emotional culture can be defined as “the shared affective values, norms, artifacts, and assumptions that govern which emotions people have and express at work and which ones they are better off suppressing.”[8] Emotional and organizational culture play a tremendous role in how effective an organization is and how satisfied those working in the organization feel.

No one in a library works alone. Whether through departmental, team-based, or committee work, everyone in a library works with others in some way. Groups with high emotional intelligence are able to work with emotions, develop an affirmative environment, are proactive problem solvers and develop cross boundary relationships more easily. Organizations and teams high in emotional intelligence perform better at their job duties and are more satisfied in their work. Emotions are contagious, and resonant cultures where members are attuned to one another’s emotional states are more innovative, work together better, and are more open to change.

Not so long ago, the common consensus was emotions did not belong in the workplace, but our emotions cannot be left at the door of the library. Emotions are perfectly fine in a professional setting. They are simply energy that can lead to action, but they must be managed and expressed in productive ways. Not expressing emotions - keeping them bottled up - can lead to stress, anxiety, depression, and burnout. Not allowing emotions to be expressed leads to passive aggressive behavior and back channel sabotage. Too much emotion can stymie progress and shut down conversations. Take for example emotional outbursts that exceed cultural norms. They can shutdown conversations and have a negative emotional effect on those present. Whether in a group meeting or one-on-one interaction, there are several tactics to confronting an emotional outburst. First, remain calm. Getting more upset than the other person only escalates the situation. Interrupt by repeating the person's name loud enough to be heard - raise your hand or wave your arms. Next, either address their concerns "I am sorry you are so upset. No one should have to feel this way. How can I/we help?" or redirect their behavior "When you are ready to discuss this in a respectful manner I/we will be here, but until then you will have to leave."[9] To successfully manage an incident like this requires a high-level of emotional intelligence.

Successful leaders are the ones best adept at managing the organization's emotional culture, promoting positive emotional states in the organization, and becoming attune with the emotional moods of those in the organization.[10] Leaders need to stay grounded and use their emotions wisely. Too little emotion and a leader runs the risk of looking like a robot, but showing too much emotion can make a leader appear to not be in control of the situation or themselves. Good leaders control their emotions instead of letting their emotions control them, which is what makes emotional intelligence so critical for a leader. Not only can emotionally intelligent leaders manage their emotions, but they can positively influence the emotions of those around them.

Positive emotional states make people and organizations more productive and creative. Negative emotions are a drain on productivity and innovation.[11] What follows is a discussion of the four parts of emotional intelligence (self-awareness, self-management, social awareness, and relationship management): what they are, how they are developed, and how leaders can use each part to manage emotional culture.

SELF-AWARENESS

The first part of the emotional intelligence framework is self-awareness and one of its two cornerstones. In order to lead effectively, a leader must be self-aware. Goleman defines self-awareness as "the ability to assess oneself realistically" and to notice, diagnose, and comprehend one's "moods, emotions, and drives as well as their effect on others".[12] Self-aware leaders understand their moods and emotional states and do not make decisions based on the emotions they are currently feeling. It is perfectly alright to be angry about a particular situation, but it is not alright to let anger drive the decision making process.

Self-awareness is about more than understanding emotions and moods. Self-aware leaders understand and accept who they are as a person. Self-aware leaders have a strong understanding of their values and align their values with their actions. This alignment of actions and values makes them non-hypocritical and helps build trust in the organization. Leaders with high self-awareness know their strengths and limitations and use this self-knowledge to strategically fill their leadership teams. Understanding strengths and weaknesses also allows self-aware leaders to develop their strengths, which has a greater return on investment than strengthening their weaknesses. Self-aware leaders also recognize and follow their personal energy for optimal workflow. They know when they work best and plan their day accordingly.

Ways to Develop

The key to developing self-awareness is reflection and introspection that honestly examines and explains your behaviors, motivations, strengths, weaknesses, and overall performance and capacity as a leader. Obstacles to self-awareness include self-deceit, inability to receive feedback from others, and ego.[13] To build self-awareness, you need to take the time to reflect not only on your actions but the reasons behind them. This is difficult for anyone to do, but can be especially difficult for leaders who not only have a busy schedule with little time for reflection but have very few if any people in the organization who are willing and able to give them truthful feedback. One way to practice introspection is to take time after an event to reflect on the situation and examine your emotions and motivations, a kind of self-debriefing. This is only helpful when you apply what you learned to adjust and improve your actions. If you do not already know, then take the time to learn what work makes you happy, angry, bored, or frustrated. Keep track of the work you perform and interactions you have and record how they made you feel. Did you feel drained or energized? Did you get into a state of flow? This can help you to plan your workday, learn where to improve, and how you need to prepare for certain situations and tasks.

You can also practice introspection by taking purposeful pauses throughout the day and answering the questions

Right now I am thinking… Right now I am feeling…

and recording the answer in a non-judgmental way. Remember, moods, feelings, and emotions are neither good nor bad. The story you tell yourself about those thoughts and emotions determines their value. This is a type of mindfulness practice. Mindfulness may seem trendy now, but it does have some great benefits for library leaders. Mindfulness practice comes in many forms, from the purposeful pause exercise just mentioned to formal sitting meditation. By developing mindfulness you becomes more self-aware and also socially aware.[14]

Emotional Culture

As a leader you can use self-awareness to manage and influence emotional culture in your library in several ways. First, be aware of what look - not just your clothes but your overall facial and body expressions - you are projecting to the world. Did you chose that look, or is it dictated by your mood? Perhaps, more importantly, what does your look say to the world? Does your look make you appear approachable or distant? Does it convey you are a leader in charge, or that you just rolled out of bed? Monitor the alignment of your emotions, body language, and facial expressions. If you want to put people at ease so they will open up and share ideas with you, then your whole face and body need to project that message.

Self-awareness is also crucial in trying to control unconscious bias. The term unconscious bias is mostly used when discussing racial or gender bias. It is unacceptable to exhibit racist or sexist behavior, but you can also show bias in other ways. Too often, the first impression we have of somebody sticks. As a leader, you might be unfairly labeling someone as lazy or a hard worker due to past interactions, not your most recent. Work to see every person and situation with fresh eyes and be aware when you are not. How you as a leader relate to others in an organization partly shapes their behavior.

SELF-MANAGEMENT

Self-awareness informs and contributes to self-management. Self-managing leaders display appropriate emotions for the situation, demonstrate resiliency, and thoroughly think through actions and their possible consequences.[15] Leadership and self-management can sometimes be at odds with

Table 1. Emotional Intelligence: Awareness and Regulation of Self

Self-Awareness	• Understand your emotions • Know your values and who you are as a leader • Open, confident, and self-accepting • Introspective
Self-Management	• Self-control • Healthy work-life balance • Resilient and long-term achievement • Be mindful of actions, thoughts, and breath

one another. Self-control - the discipline to do what needs to be done at the moment - is a finite resources and needs to be renewed. When used heavily in one area like staying focused on achieving long-term goals, it can slide in other areas, particularly impulse control.[16] Self-management is how leaders can create a healthy work-life balance. Work and life will never be perfectly balanced and probably should not be. Leaders need to be flexible in how they spend their time to account for increased work or personal life demands.

Emotionally intelligent leaders know which areas of their life need the most attention at the moment, and they can adjust their focus accordingly. Self-managing leaders know how to set boundaries, when to take a break, and how to best avoid burnout and manage stress.

Self-management can help leaders in ways they may not think about much. Much human communication is non-verbal, and self-management allows leaders to control their non- verbal communication. Library leaders cannot sit in a meeting and sigh, roll their eyes, or cross their arms and slouch. Self-managing leaders moderate their responses and are consistent in the emotions they display. Inconsistent emotional responses make a leader unapproachable and untrustworthy. Leaders with high levels of self-management complete projects, achieve goals, and are resilient with an ability to adapt change direction as needed. Self-managing leaders understand that in order to meet their long-term goals they must sacrifice in the short- term for greater rewards in the long-term. Self-managing leaders are not reactive, and they wait to give a response until they are completely comfortable with it.

Ways to Develop

In order to improve your self-management, make yourself accountable to others, especially when it comes to progress towards goals. Having an accountability partner with whom you check in each day, week, or month can help you stay on track and provide needed support, especially when it comes to finishing projects and reaching goals. Monitor what you say to yourself. Do not let those temporary thoughts - those negative thoughts, bad moods, or temptations to cheat your values - become permanent ideas. Let those ideas pass or mindfully disrupt that false narrative. Be aware of your breathing and be in control of your breath. Your emotions and moods can change how you breath, which affects your entire body and brain.

Regularly practice deep breathing exercises and be consistent with your breath. This can also help you stay clam in an emergency. Finally, be mindful of your actions and always strive to be present and in the moment no matter what you are doing.

Emotional Culture

A prime way to use self-management to influence emotional culture is to respond, not react to situations. When you react, you fall back on habit, letting your mood or initial emotion dictate your behavior. When you respond you are giving the situation the proper attention and consideration it deserves and your response is appropriate to the situation. In order to learn to respond instead of react, delay your response. Take a few deep breaths and become aware of your current emotional state. Sometimes you get really excited about an idea or project and fail to see its shortcomings. Or you have a bad initial reaction to an idea, but after time see it is actually a good idea. Other times your initial reactions hold strong over the long run. No matter the case, when you take time to delay your response, to mull over the proper way to proceed, then you can be assured you are making the decision in a much better place instead of just reacting with your emotions.

A vital aspect of emotional culture and self-management is taking care of yourself and those in your library. Many leaders and organizations talk about having a healthy work life balance, but they do not always follow their own advice. This is one area where your example has a great deal of influence. Something as simple as sending an e-mail on the weekends or after hours can have a big effect. Recipients now feel the pressure to answer the e-mail you just sent, which in turn causes stress and upsets their work-life balance. As a leader, you want to set examples for working hard - not coming in late or leaving early - but you must be cognizant of when your pace setting is leading to burnout and stress in the library. You also need to take care of yourself. Get a hobby, take time away from work, do things that replenish you and recharge your battery. Find healthy ways of dealing with the stress, expectations, and workload that come with a library leadership position. We crack jokes about wine and chocolate, but those are not healthy ways to deal with work and life problems.

SOCIAL AWARENESS

Social awareness means understanding and relating to people and the surrounding environment. Along with its main building block empathy, social awareness is the second cornerstone of emotional intelligence. Without empathy we cannot connect with other human beings. Empathy is what allows us to understand others' emotions, to actually feel them ourselves, and to respond in an appropriate and constructive way. Salovey and Mayer reckoned empathy to be the most crucial piece of emotional intelligence.[17] Three types of empathy exist. The first is cognitive empathy, which is understanding another person's perspective. Second is emotional empathy; feeling what another feels. The third form of empathy, to sense what another needs from you, is empathic concern. An empathic leader builds better organizational relationships, which lead to more effective and happier organizational members.[18]

One important aspect of empathy for leaders is organizational awareness, understanding the culture, cliques, and politics of the library. This is crucial for any leader to have. A leader needs to be able to recognize powerful groups, influential individuals, and how things work in a library in order to be effective. Organizational awareness is also crucial when it comes to resonant and dissonant leadership. Resonant leaders are high in empathy and more attuned to their organization. They promote collaboration and innovation. Dissonant leaders, on the other hand, use little empathy in their organization and create a climate of fear, anger, and other negative emotions.[19]

Compassion vs. Empathy

Empathy is seen as the foundation for social awareness and much of emotional intelligence, but empathy has some drawbacks. Understanding the perspectives of others is a must for any leader; however, feeling another's emotions as if they were one's own is asking a lot of leader and can lead to emotional burnout and breakdown. Empathy can also cause bias. Research has shown that empathy may lead to a leader making poor decisions to benefit someone who might not need it. Leaders can also show bias with whom they empathize. People relate to and empathize more with people who are more similar to them.[20] Researchers and writers have now started to use the term compassion instead of empathy. Daniel Goleman in fact has started using the term "compassionate empathy" in place of empathic concern.[21] Compassion is the understanding another person's needs and helping and supporting them as they work to meet those needs.[22] Compassion works better for leaders than empathy because empathy requires a leader to take on the burden of another while compassion moves a leader to work with and help a person alleviate their burden. Self-compassion is a must for everyone and the foundation of self-care discussed above. Compassion can be focused both outwardly and inwardly and may well be a better tool for leaders than empathy. No matter what term you use, library leaders need to use their emotional intelligence to care about and want to help everyone in the library.

Ways to Develop

Some people are naturally more empathetic and compassionate than others, but both can be learned. Self-awareness is a valuable tool in building empathy and compassion. Being better in touch with your own emotional states helps you understand other's emotions. Another way to build empathy and compassion is to be fully present when you are with another person. When you are distracted you do not notice important aspects of verbal and non-verbal communication, and you disrespect that person by not giving them the attention they deserve. To ensure your full presence in a conversation actively listening to the person with

whom you are speaking. Summarize what they have said to you and ask questions to clarify and better understand their message. You can also increase your empathy by observing other people and paying attention to their body language, facial expressions, and habits. What do their behaviors tell you about what they are feeling and experiencing? How would you approach them with bad or good news? How would a difficult conversation go with a person in that mood?

Emotional Culture

How can you use social and organizational awareness to manage emotional culture? The first thing is to recognize your coworkers as people, relate to them, and work to make a human connection with them. It might not seem like much but calling people by their names when you greet them can have a tremendous positive effect on them and take you out of autopilot communication. Remember the little things about your colleagues and their families. As a leader, you need to allow people in the library to be heard and express their emotions, even if they are not the ones you want. Approach people and respond to them with the proper emotion. While you reflect the emotion of another to build trust, you need to be able to redirect emotions and conversations. As a leader, you should acknowledge all feelings, but also counter negative emotions with positive feedback; influence others' emotions through the use of your own emotions. Make sure you reward the behavior and work you want to see. This reward does not have to be monetary. A verbal or written recognition lets that person know you were paying attention to and cared about their deeds. Through these actions, leaders build a foundation of the emotional culture that people in the library matter.

Another way social awareness is important in managing emotional culture is through group problem-solving. By getting feedback from everyone, you make everyone feel a part of the process. You and others in the library are also able to learn about and appreciate the perspectives of other folks in the library. You also need to nip problems in the bud. Sometimes it is wise to let the people affected solve a problem by themselves, but you need to have a good understanding of the problem and people involved. Too often little problems which could have been dealt with easily and effectively grow quickly into big, complex problems with no easy solution. Finally, as a leader help develop a common purpose for your library. This is a bottom up not a top down approach. You help facilitate everyone's voices to reach a common understanding of what everyone is working towards in the library. This purpose helps create common ground for everyone to approach each other. By helping to create a common purpose, you also help create hope and vision for a better future.

RELATIONSHIP MANAGEMENT

Relationship management involves initiating, building, and maintaining relationships inside and outside of the organization. Having good relationships throughout the organization helps leaders influence, inspire, and mentor others. Good relationships also lead to better teamwork and an easier time managing change. Building relationships is key for a leader.

Leadership is about relationships. The better the relationships between leader and follower, the better the leader, the better the follower, and the better the organization performs. These relationships do more to determine the success of the organization and fate of the leader than most any other factor. Better relationships between leaders and followers leads to better organizational citizens who are involved beyond their job descriptions and make positive contributions in all areas of the organization. The importance of good relationships extends to outside the library as well. Library leaders need to build relationships with academic leaders, city officials, library board members, and college faculty.

Ways to Develop

You can become better at relationship management by being open about yourself and curious about others. People like leaders who are complete people and show

Table 2. Emotional Intelligence: Awareness and Regulation of Others

Social Awareness	• Empathy • Compassion • Be aware of organizational culture • Work to understand others
Relationship Management	• Building and maintaining relationships • Influence and inspire • Communicate • Be open and curious

their human side. In order to have relationships, you must build trust throughout your library. Trust is built slowly through honesty, ethical behavior, value-driven decision making, and transparency. Be honest about the reasons behind your decisions. Use the other areas of emotional intelligence to be consistent in your message, make sure your tone, body language, and facial expressions are aligned, and be consistent with your moods and emotions.

Clear and consistent communication is another way to develop relationships in a library. Good communication includes both talking and listening and goes throughout the organization - including up to the leader - not just down to everyone else. When you talk to others, be both intellectual and emotional. Work to exude warmth and energy in your communication. This allows you to connect with more people on many levels, and it allows your listeners to feel the words you are saying because you feel them as well. Communication is about more than talking, it is also about listening. In order to make someone feel heard, re-state what the other person said, making sure they agree to your summary, before speaking. This helps both you and the other person come to a real understanding of each other's viewpoints and helps prevent an argument from being misconstrued.

Emotional Culture

If you already have good relationships with the people in your library, then you can use those relationships to influence them. But you can also use emotional intelligence and relationship management to help repair broken or antagonistic relationships and manage conflict. When trying to mend a relationship or defuse a difficult situation, focus on the facts, not the personalities of the people involved. Likewise, focus on the message, not how it was delivered. A passive-aggressive person might deliver a good message in a way that is difficult to receive. Try to give the other person the benefit of the doubt. Your passive-aggressive colleague might not handle conflict very well or know how to constructively deliver his/her point. Reflect on what you have done to contribute to this situation as well as questioning your assumptions about what is happening and why it is happening. Always meet hardness with softness. When you meet hardness with hardness, something will break. Meeting negative behaviors with negative behaviors is like adding gasoline to a fire and will only make the situation worse. Do not try to change the other person. This is almost always a waste of time.

Work instead to understand their needs and resolve the situation as amicably as possible.

Lastly, give the other person room to back down. When a person feels desperate, he/she will fight ferociously. Giving someone the ability to gracefully back down helps ease tensions and allows them to save face.[23]

CONCLUSION

Emotional intelligence has a wealth of benefits for library leaders, and a healthy emotional culture is critical for a library's success. While some may think emotional intelligence is innate, it can be learned through coaching, practice, and feedback. This article discussed the importance of emotional intelligence to library libraries; discussed each of the four pieces of emotional intelligence (self-awareness, self-management, social awareness, and relationship management); provided ways to develop each piece; and illustrated ways emotional intelligence can be used to influence and manage a library's emotional culture. ■

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FOOTNOTES:

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Sliding Across the Database Divide with Proactive Chat Help

BY ADRIENNE WARNER

INTRODUCTION

Across the United States, reference librarians use instant messaging tools to connect synchronously with researchers, and chat service is a staple across many academic institutions. At the University of New Mexico, a Research[1], Hispanic-Serving Institution, reference librarians serve a community of 20,244 FTE (Office of the Vice President for Research, n.d.). At the University Libraries ("the Library"), the reference landscape has changed in step with national trends of the last decade, particularly as face-to-face interactions have declined and online chat interactions have increased. Since the Library's adoption in 2008, chat reference has grown to become an integral component of the suite of reference services offered (Aguilar et al., 2011). Staff provide in-house chat help to users who initiate conversations from chat boxes sprinkled across library web pages. Until recently, all chat boxes and links have been stationary, user-initiated, and placed within the web content management software accessible to and maintained by Library employees.

In 2016, the Library migrated to Springshare's LibAnswers software platform, which offered three styles of chat boxes, each with customization options. (Springshare has since created a fourth style, the floating widget.) Two of the style options provided the ability to make the box actively solicit a chat interaction with a user, whether by sliding out from a tab at the side or by popping up into the middle of the screen. These newly available features represented an increasingly interesting prospect.

The software also offered improved transcript access. In reviewing logged chat conversations, the reference team observed many interactions where users needed help finding appropriate research databases, or had recently been in a database and could not find the material they needed. As the reference team discussed this trend, we realized that even though librarians and professors advised students to use databases for their research, there was no librarian help embedded in those same databases. If students realized a need for live, online librarian assistance, and knew that chat help was available somewhere, they had two options. One route was to click the back arrow to find a library page with a chat widget, potentially losing their place in the database. The second choice was to open a new page or tab, navigate to the library website, and locate a chat widget.

We decided that in addition to placing chat widgets into databases, we would make them proactive. We hoped that the proactivity of the widget would signal to confident database users that librarian chat had newly arrived in those platforms, while also actively offering help to inexperienced users. We ruled out passive chat boxes because they required users to be aware of their need for help before initiating conversations. Alternately, the proactivity of the widget could help users assess whether they needed librarian support.

With a clear intention to expand chat service to databases, we added ourselves to the ranks of other academic institutions who adopted this technology.

PROACTIVE CHAT EFFORTS IN ACADEMIC LIBRARIES

Chat service in many academic libraries is now a standard offering, and the development of the option to make chat boxes automatically offer librarian help has created buzz. Since the first documented implementation of proactive chat in an academic

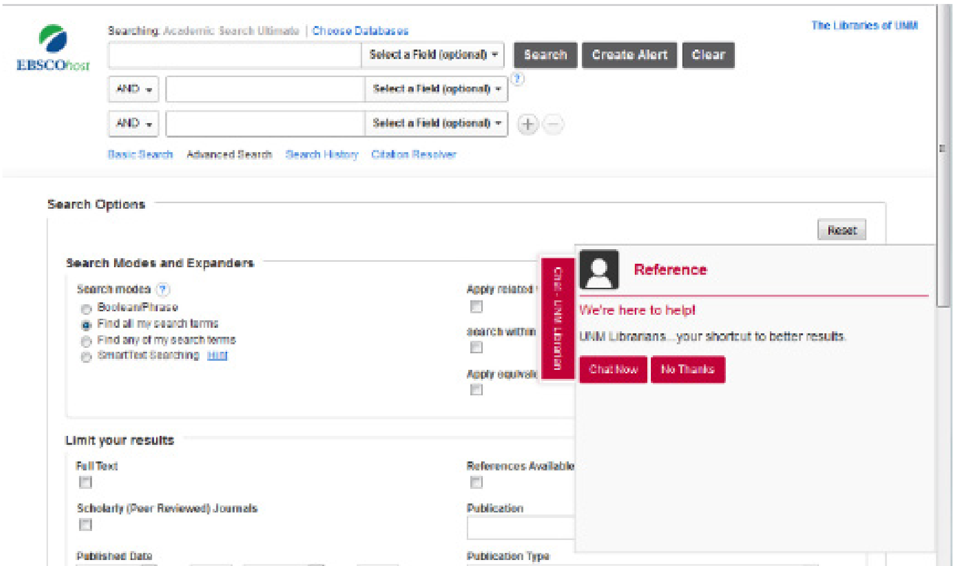

Figure 1. Proactive, slide-out widget in EBSCO's Academic Search Ultimate database.
This screenshot shows the slide-out chat widget deployed and extended and hovering above the search homepage of the EBSCOhost database Academic Search Premier. The chat widget is accented with red and gray, and contrasts with the blue, green, and white lettering of the database's palette."

library in 2014, several libraries have implemented proactive chat service and written about their experiences (Epstein 2018; Fan, Fought & Gahn 2017; Hockey 2016; Kemp, Ellis & Maloney 2015; Pyburn 2019; Rich & Lux 2018; Zhang & Mayer 2014). While most have focused on placing proactive chat widgets in library website pages, some institutions have also placed them in discovery tool results pages. Two articles documented interest in extending proactive chat to database platforms (Rich & Lux 2018; and Epstein 2018), and two describe successful deployment of proactive chat within databases (Hockey 2016; Pyburn 2019).

Several articles discuss increased chat transactions following the implementation of proactive chat (Zhang & Mayer 2014; Kemp, Ellis, & Maloney 2015; Epstein 2018; Rich & Lux 2018;). In their webinar, "Transforming Online Reference with a Proactive Chat System," Jan Kemp and Marjorie Warner reported that their venture was so successful that their institutions hired additional staff to accommodate the increase in chat volume (2016). In several cases, proactive chat mitigated decreases in reference traffic and even catalyzed expanded reference service.

PERCEPTIONS OF PROACTIVITY

Perceptions of the proactive nature have varied, with users and librarians expressing a wide range of opinions. In the first documented exploration of proactive chat in 2011, academic librarians conducted interviews with users to determine how a proactive, pop-up chat box on their library website might be regarded. When asked whether they found the offer to be positive or negative, four out of the six interviewees thought the pop-up was intrusive, perhaps because the chat box only initiated as a response to catalog searches that returned zero results. The authors hypothesized, "The negative feelings seemed to stem from the users' association of a pop-up window with bad experiences on the Internet with pop-up web advertisements and electronic viruses" (Mu et al. 2011, 127). They recognized that users' broader Internet experiences provided context for their perceptions of proactive chat. The negative perception affected some librarians, as well. One dismissed proactivity in chat as an "undesirable feature," and concluded "…in most cases – and maybe you can relate – proactive chat tends to be annoying or distracting" (Schofield 2016, 32).

In several instances, however, the potential benefits of proactive chat outweighed negative associations, and experimentation with this new twist on an existing service continued. Nuanced approaches intended to mitigate potential negative connotations revolved around placement and wording. Two reports documented the targeting of strategic pages in which to place proactive chat, rather than a blanket treatment (Kemp, Ellis & Maloney 2015; Hockey 2016). Librarians at Bowling Green State University examined locations within the pages themselves, and chose to put the chat widget in the unobtrusive lower right corner. They also used welcoming language intended to put users at ease (Rich & Lux 2018).

Changes in users' perceptions since 2011 have been documented with positive feedback. Kemp, Ellis, and Maloney analyzed user comments in their library's 2015 LibQUAL survey, and found that only five out of 38 comments mentioned chat proactivity in a negative light (2015, 768). Rich and Lux did not receive any negative comments from students on their proactive chat efforts, though their colleagues did lodge complaints (2018). Librarians at Penn State University conducted a usability study on proactive chat and found that users would welcome a pop-up chat widget on the library website, and described the widget as "easy to use," "approachable," and "useful" (Imler, Garcia, & Clements 2016, 287). In this study 93% of the participants said the proactive chat widget on EBSCO's PsycINFO database search page was helpful. Only one user out of 30 associated the pop-up chat widget with negative terms (2016, 287). These positive experiences with proactive chat may be informed by the rapidly evolving web landscape. Fewer involuntary pop-up advertisements invade browsing sessions, and the proliferation of instant and social messaging platforms are more integrated into users' Internet experiences.

PROACTIVE CHAT IMPLEMENTATION AT THE LIBRARY

Laying the Foundation

After viewing Kemp and Warner's webinar at the Library, we garnered enough institutional buy-in to put together a small project team to explore placing proactive chat in subscription databases. As exciting as the prospect of duplicating other libraries' success was, the project team knew that the existing chat service model would not be able to accommodate the marked increase in chat volume reported elsewhere. We did not want to overburden staff providing face-to-face help by asking them to field potentially concurrent chat sessions. Relocating staff to offices to answer chat inquiries was not an option either, as staff members at the reference desk were also expected to supervise student employees and maintain building safety and security. Budgetary constraints ruled out the possibility of hiring additional staff to handle potentially large increases in chat volume.

In addition to chat volume, other unknowns existed. The project team needed to verify proof of concept. While

> » **Once the team built the widget, we tested its functionality by placing it in live websites.**

some database vendors allowed links to the Ask A Librarian help page, the project team was unaware of any vendor allowing proactive chat widgets to be embedded in their platforms.

With a modest project scope in mind, the project team decided to target four large database vendors: ProQuest, Clarivate Analytics, Gale Cengage, and EBSCO. The vendors' responses to our exploratory requests for collaboration varied. ProQuest responded that the company could not accommodate our request, citing an existing option of a stationary chat link placed at the bottom of the database search page. Clarivate Analytics deferred because the company was in the midst of changing ownership and invited possible future collaboration. Two vendors, Gale Cengage and EBSCO, welcomed the venture and referred our inquiry to their in-house tech teams.

Building the Widget

With two vendors on board, the project team needed to build the chat widget. We began by choosing the slide-out widget style, preferring its ability to remain visually present at the side of the screen as the user navigated. Conversations could exist alongside database searching.

Next, we customized the widget's behavior and wording. After discussion and beta testing, the team chose a 30-second interval for proactive behavior. This meant that the user would encounter the widget if they navigated to a subscription database page and lingered there for 30 seconds. At that point, the tab on the right side of the screen would slide to the left 3 inches, revealing a box that said "We're here to help! UNM Librarians… your shortcut to better results." With this language, we wanted to welcome the user and also signal that a librarian could be summoned if they chose to chat. We did not want the user to feel as though they were automatically thrust into a human interaction as soon as the box deployed, signified by a first-person direct question such as, "Hi! Can I help you find an article?" We thought it could be less intrusive if the user knew they would not be rejecting a person if they chose not to chat. Instead they would just be dismissing a tech object. After the welcome message, the user would have the option to choose "Chat now" or "No thanks" (Figure 1). If the user clicked "Chat now," a free text field appeared for the user to type an initial question. After the user submitted their question, the LibChat software notified reference staff of an incoming chat inquiry.

After deciding the interval and language, we customized the color palette. We chose to incorporate the cherry red color of university branding to further reinforce librarian help, visually differentiating it from the EBSCO and Gale color branding and their customer service options. The presence of the cherry red chat tab across the two vendors' sites further distinguished the service's brand.

Testing

Once the team built the widget, we tested its functionality by placing it in live websites. Because we did not have access to editing sandboxes in Gale or EBSCO platforms, we created a series of private LibGuides to test the widget's behavior and were pleased with how a chat conversation started in one guide was auto-populated into the widget on another guide. We were confident this behavior would be replicated in the databases, and users would be able to navigate from page to page without losing the chat conversation.

Because we were not able to test the widget inside the databases before going live, the project team decided to implement proactive chat the second-to-last week of the spring 2017 semester. This had traditionally been a slow period in the Library's chat reference load, so staff would not be overwhelmed while also allowing a modest amount of users to encounter the widget. Additionally, the project team could use the slow summer period to resolve possible technical issues before the busy fall semester. Vendor tech teams agreed with the proposed timetable and placed the chat widget in each of their databases, including the introductory search page, the results page, and the item detail page on May 3, 2017.[1]

TECHNICAL HITCHES

Reports of technical difficulties with proactive chat at other institutions have revolved around software code incompatibility. One institution could not insert the chat widget onto its homepage because of conflicting features in the content management software of the library site (Fan, Fought & Gahn 2017). Attempts at placing the widget into EBSCO and ProQuest databases returned errors for database users at another institution, although eventually they were smoothed out in the ProQuest platform (Pyburn 2019). Another report discussed the inability of the widget to remember when a user had clicked, "No thanks," an experience we would later have with our chat widget (Epstein 2018). Each of these articles had yet to be written when we decided to implement proactive chat at the Library, however, so we went into the process not knowing what could go wrong.

Thanks but No Thanks

Three logistical issues came up during the course of the project, and the team discovered the first problem a few weeks after going live with proactive chat. During some browsing sessions, the chat box refused to take the hint and remain stationary after the user clicked "No thanks." This issue did not crop up during the project team's beta testing, perhaps because the team tested the widgets on LibGuides, another Springshare application. In the live database environment, however, sometimes a single user would be met with multiple chat requests.

We tried to duplicate the problem on staff and library classroom computers, on different browsers, and off-campus. Eventually, the team realized that browser cookie settings could interfere with the chat software's ability to track the "No thanks" click history. Because users controlled their browser, we needed an easy way to explain the issue and offer instructions to both users and reference staff fielding chats. We created a Frequently Asked Questions entry that explained the need to allow third-party cookies on users' browsers with links to directions to adjust the settings in major browsers. For some users, this worked. But cookie settings only accounted for a portion of the disregarding behavior, however, and the issue persisted. The project team continued to troubleshoot but could not identify a clear set of circumstances in which the chat box would ignore users' preference. Because the team could not consistently reproduce the pattern and did not have access to data-

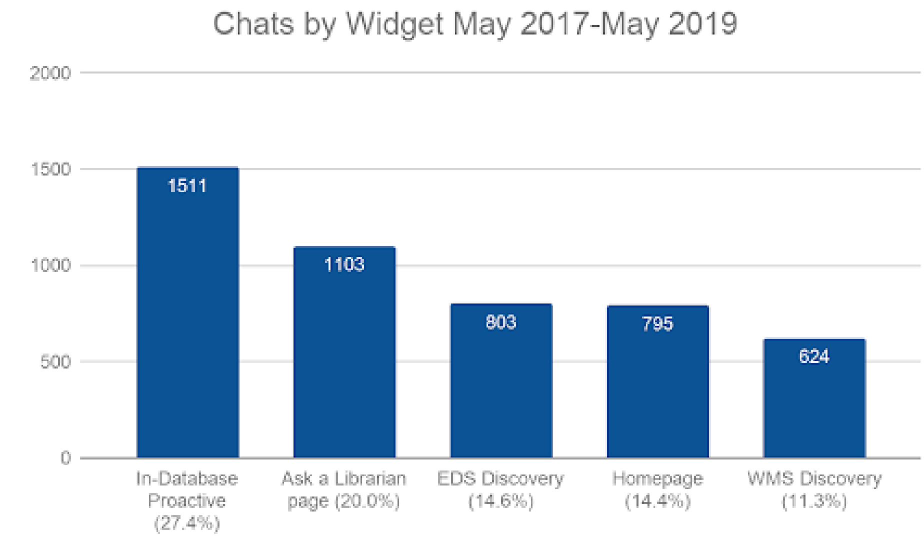

Figure 2. Top five performing chat widgets since proactive chat implementation..
This chart shows the number of chats fielded over a 2 year period. Full description of Figure 2 as a list.

base software code, further troubleshooting by the project team was not possible.

In some cases, this technical annoyance interrupted library instruction sessions, causing librarians to have to explain it to a classroom of students. For some colleagues, the interruption offered a chance to promote the availability of the service and it only offered disruption for others. Despite the occasional unpredictable widget behavior, the project team determined that the issue did not happen frequently enough or was not a significant user deterrent to warrant complete cessation of the proactive chat service.

Non-transferrable Conversation

Back in the widget formation stage, the project team chose the slide-out widget style in part because the chat conversation embedded in the originating page followed the user as they navigated across pages. This behavior enabled the user to maintain a stable connection to the chat agent and allowed the conversation to partially overlay the active page. However, in September 2017, several months after going live, the behavior of the chat boxes changed, so that chat conversations in progress did not automatically populate onto new pages. When users discovered that the new webpage did not contain their in-progress chat, they were left to search for the conversation or start another. Some users navigated backward to the page in which the chat began. If it took longer than 30 seconds for the user to find the correct page and add another comment to the chat, the software treated the conversation as dormant and ended the chat. When this happened, the user would find that the text box no longer accepted messages and instead displayed the end-of-chat survey or a fresh chat box. On the librarian's side, the chat box turned red and no further comments could be added.

This unanticipated behavior change caused a great deal of confusion for users, and left staff scrambling to make sense of what was happening. As with the "No thanks" issue, impromptu troubleshooting sessions with users took place when they alerted reference staff to the issue. Reference staff had to juggle problem-solving efforts while also assisting users with their information needs. The remote location of chat users further complicated problem solving efforts because staff could not see which steps resulted in the disconnects for the user. Several days of increased disconnections and frantic reconnections during a busy time of the semester occurred before we understood that the behavior of the widget had changed.

Even though we now knew what the problem was, there was little the Library could do to solve it. Troubleshooting sessions were difficult, since we could not view or edit proprietary chat or database software code. Recreating user click-history and device behavior was impossible. We contacted the vendors, however triangulation with the software companies and the Library created an indistinct responsibility zone that proved difficult to navigate. Resolution efforts over several months were ultimately ineffective. The project team decided to change the widget to the pop-up style, which allowed the chat conversation to take place in a new browser window and remain unaffected by user navigation in the other windows.

Although an improvement in sustaining conversations, this widget style required users to toggle between windows each time they wanted to add a new comment to the conversation. Additionally, the user was not notified with a visual or auditory cue when the librarian added a comment, so users sometimes missed comments. We requested that Springshare adjust the chat code to add a visual ping of the minimized window so users could see the librarians were talking, however this did not happen.

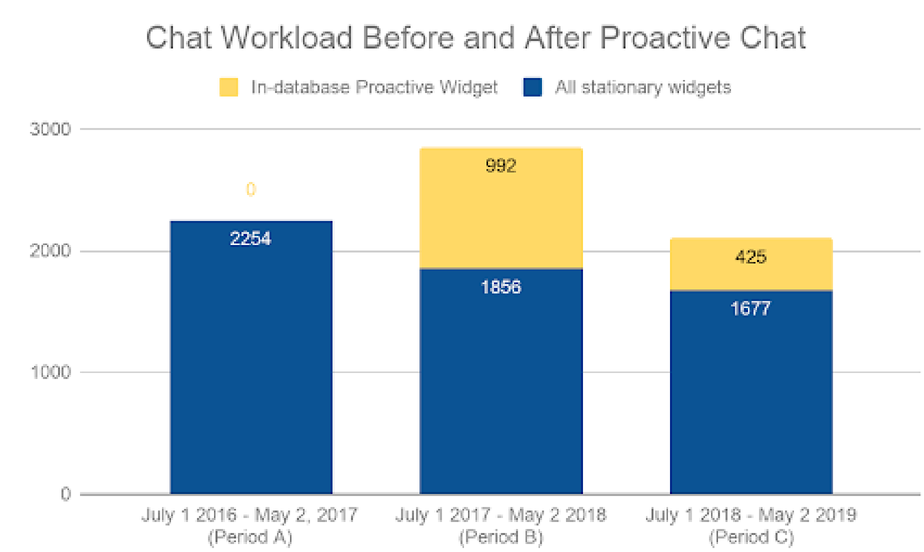

Figure 3. Chat transactions originating from stationary widgets and in-database proactive widget..
This chart shows that after the infusion of proactive chat transactions in Period B, the number declined in Period C to below Period A levels. Full description of Figure 3 as a list.

Vendor Control

While the Library appreciated Gale Cengage and EBSCO's willingness to work with us, these collaborations made us even more dependent on them. There was no formal documentation of this collaborative agreement, and the continuation of proactive chat service was dependent on the vendors. In February 2018, we discovered that our chat widgets no longer appeared in the Gale Cengage suite of databases. After asking our vendor contact, we learned that the company's refreshed platform no longer supported our widget and subsequent requests for reinstatement were unsuccessful. The removal of proactive chat boxes from Gale Cengage databases reduced by half the number of databases in which the proactive chat widget appeared. EBSCO continued to support proactive chat boxes in their databases.

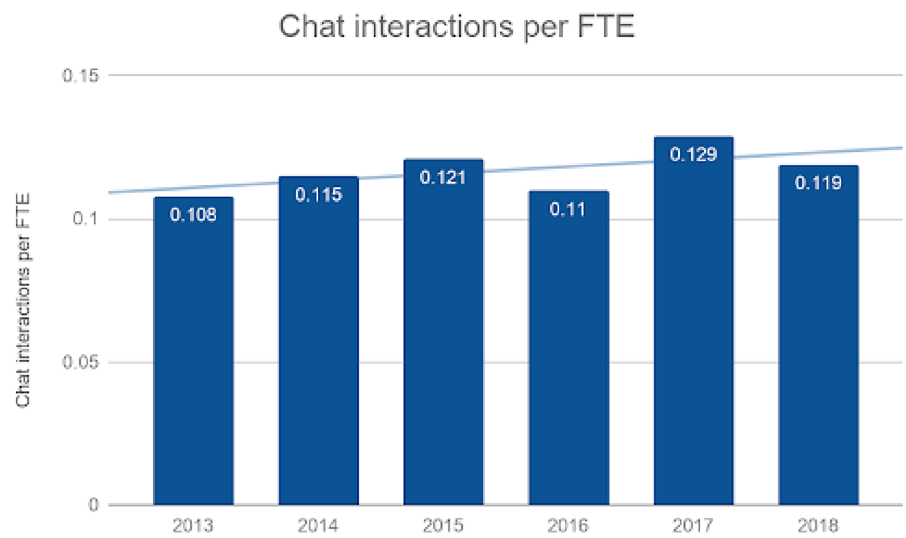

Figure 4: Chat interactions per Full Time Equivalent (FTE) student enrollment metric.. The trendline shows a slight increase in the number of chats per student since 2013. Full description of Figure 4 as a list.

AN IDEA TO ADDRESS THE HITCHES

By March 2018, proactive chat had been in the databases for almost a year, and the technical issues had become apparent. We wanted to resolve each of the hitches: the disregard of the user's choice of "No thanks," the non-transferability of the conversations across web pages, and the susceptibility of service elimination by vendors. We formed a larger team of Library colleagues to evaluate options, including the library information technology program analysts, web librarian, and electronic resources expert. One person suggested that we try placing proactive chat boxes on the proxy server, the interface that authenticates users' credentials prior to subscription database access. If successful, this adaptation could give the Library more autonomy in that we could overlay any or all of the subscription database platforms and would not have to rely on each vendor for initial implementation and sustained collaboration. With supplemental assistance from the Springshare tech team, and a newly available ProQuest sandbox for testing, preliminary gains gave us hope. We added custom code to the proxy server content management software, placing an additional timer that would begin after the user clicked "No thanks," and override subsequent offers to chat within a half hour timeframe.

This seemed to cut down on the number of offers to chat, but did not resolve the issue completely. The original behavioral inconsistencies arose with this proxy layer solution, especially when we tested moving from one ProQuest database to another. The persistence of behavior issues seemed to confirm that the problem lay with the interaction of the chat widget code and the database code. Despite initial optimism, ultimately the team decided that without access to the proprietary code, the Library's creative work-arounds would not adequately reduce the original technical issues, and shelved further development of this idea.

GAUGING USAGE

We knew the widgets were not behaving as expected, but it was not clear whether these hitches were affecting use. To understand usage, we analyzed transaction data recorded by the LibAnswers software. Although it collected robust metadata, the software did not track whether the chat was started by the user after the proactive widget slid out on its own, or as a result of the user clicking the stationary chat tab before the 30-second proactivity trigger. Because this was unknown, we could not draw direct conclusions about user and chat box interaction resulting from widget proactivity. The following data sets use the term "in-database proactive" to describe the originating widget, not the stage of widget activity when the user interacted with it.

Use by Widget

The Library implemented live, proactive chat on May 3, 2017, and as of this writing (May 24, 2019) has received a total of 5,503 chats across all UL widgets. Of that total, 27.4% (n=1,511) originated in the proactive database chat widget, making it the top producing chat widget. This number may be inflated due to patrons attempting to reconnect after an interrupted interaction as described previously, and additional research is needed to understand the exact number of disconnected and restarted interactions. Despite this possible inflation, that some users were willing to restart a chat conversation indicated their interest in using the service. Whether they responded to the proactive offer or clicked on the stationary tab to initiate an interaction, users chose to chat when they were in the databases, and did so at a relatively high rate (Figure 2). Users have likely encountered the technical issues, yet their usage of the in-database chat widget suggests that the issues have not significantly deterred them.

Workload

Initially, we limited the project scope to avoid overwhelming reference capacity and needed to determine if that decision was supported. To gauge overall impact of the additional proactive chats in relation to existing chat traffic, it was valuable to compare the number of chat transactions that took place in subscription databases with all other chat transactions. The Library migrated to LibAnswers LibChat software in July 2016. Ten months later, in May 2017, proactive chat boxes in databases became available to patrons. From July 1, 2016, to May 2, 2017, the period before proactive chat was implemented in the databases, there were a total of 2,254 chat interactions. From July 1, 2017, to May 2, 2018, after proactive chat was introduced, the number of chat interactions jumped to 2,848, an increase of 26.4%. In the last period measured, Period C, chat transactions in both station-

Figure 5. User ratings by chat widget from May 2017 to May 2019.

	Average Rating	Number of Ratings	% Excellent	% Good	% So-so	% Bad
WMS discovery	3.83	87	91	2	6	1
Ask a Librarian page	3.77	224	85	10	2	3
EBSCO Discovery Service	3.73	195	82	11	4	3
In-Database Proactive	3.71	238	79	15	4	2
Homepage	3.71	164	78	18	2	2

ary and proactive widgets decreased from Period B. This total is reduced from Period A, before proactive chat was introduced (Figure 3).

The introduction of proactive chat into the databases initially increased the overall chat load. Over time, however, all chat interactions fell, and initial gains provided by the introduction of proactive chat have been subsumed in the decline. In-database proactive chat load has not overwhelmed agents and the initial project scope was deemed appropriate.

In-database proactive chat from Period B to C fell by 57%, and several factors may have contributed to this reduction. During fall 2017, approximately 20% of in-database proactive chat transactions originated from the Gale Cengage databases, and the elimination of the widget from that vendor's 50 databases at the end of 2017 could account for part of the decrease seen in Period C. Also in fall 2017, the slide-out widget behavior changed, preventing some chat conversations from following the user. Because some users chose to start new chats to regain connections with reference staff, and the system records each conversation as a unique instance, some interactions were likely logged twice. Although it is impossible to know the exact number of disconnects due to widget behavior failure, review of chat transcripts suggests this occurrence was more common in Period B. We changed the slide-out style to the pop-up style in Period C, so it is possible this change reduced the disconnects, thereby reducing users' need to restart chats. Additional analyses will be possible as more data is collected in the coming semesters.

Several factors may be contributing to the overall decline of chat interactions at the Library. When taken as a whole, reference transactions via all modes (face-to-face, chat, email, SMS text, and phone) have decreased when measured from July 1, 2016 to May 2, 2019. When parsed by Period, chat, email, and SMS text follow the same pattern, peaking in Period B. The number of views of the Frequently Asked Questions have risen each year, perhaps answering questions otherwise fielded by staff. Library instruction initiatives, both face-to-face and online, may also impact the number of questions asked by chat or other reference mode. Another possible reason for decreased library reference transactions is that instructors may be accepting a wider range of resources found outside the Library's online resources. Although enrollment at UNM has declined each year since 2014, the number of chat interactions per full-time equivalent has increased slightly (Office of Institutional Analytics, n.d.). 2017 saw the highest chat rate per student in recent years, a number perhaps influenced by the additional chats taking place within the databases (Figure 4).

User Ratings from Post-chat Surveys

Usage statistics were helpful to understand how users were interacting with the in-database proactive widget, and we wanted to investigate users' views of the quality of interaction that took place within it. We looked at data collected via the post-chat survey, which included a 1 to 4 rating scale: 1 was bad, 2 was so-so, 3 was good, and 4 was excellent. Users could rate any part of the chat interaction, including but not limited to the proactivity or non-proactivity of the chat box.

The number of ratings the top five most-used widgets received followed the pattern of overall usage. The in-database proactive chat widget was the most used, and also received the most ratings (n=238), and had an average rating of 3.71 (Figure 5). The second-highest used chat box (Ask A Librarian) received the second-highest number of ratings (n=224), and had a slightly increased rating average of 3.77. The widget with the highest average rating was the WMS discovery chat box (n=3.83).

Although the average rating for the In-Database Proactive widget was 3.71, which tied for last place, it was 0.12 behind the first place widget. Users rated chats occurring in the In-Database "Excellent" 79% of the time. Additionally, chat conversations rated within all of the widgets are well above a "Good" (3) rating. This consistent rating average suggests users did not associate the in-database proactive chat technical issues to negative chat ratings.

The top five most-used widgets had comparable average ratings, commonly receiving the "Excellent" rating.

FUTURE DIRECTIONS

Although we encountered technical hitches with this project, the project team counted this endeavor a success. Over a quarter of Library chat conversations came from inside database platforms, spaces previously devoid of librarian help. Users rated their interactions as overwhelmingly excellent. As we continue to assess this project, we would like to explore expanding proactive chat to more databases and the discovery tool, and reach out to previously unavailable vendors. We have plans to conduct usability tests with in-database proactive chat users to further investigate widget behavior and users' perceptions. A deep dive into the types of questions arising within the proactive chat widget is in development.

Additional opportunities to research proactive chat exist, especially in the realm of accessibility. Patrons who use screen readers and users who access proactive chat on their mobile devices may encounter technical glitches beyond those outlined here. Licensing negotiation is another avenue of potential interest, and affirmations for chat widget support could provide clarity in vendor collaboration.

As libraries across the United States work to reach users at their point of need through proactive chat help, momentum builds for deeper collaborations. Librarians, content providers, and library software companies may be able to make this highly-used service seamless, and bridge the database divide.

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FOOTNOTE:

1 While a thorough investigation about the intersection of patron privacy with the data collection practices of chat and database software vendors is outside the scope of this article, it is worth noting that increased access to users' information by the database vendors seems unlikely. The EBSCO and Gale Cengage tech teams received a snippet of widget code to embed in their pages, not the access key to the Library's Springshare LibAnswers instance. Any additional patron data collected from in-database chat sessions would likely reside with Springshare, rather than EBSCO and Gale Cengage. LibAnswers records the referring URL that could include search terms entered by patrons using databases, such as in this string: https://web-b-ebscohost-com.libproxy.unm.edu/ehost/resultsadvanced?vid=17&sid=790eefd2-4a20-4947-a0fc-ffba4598916a%40pdc-v-sessmgr05&bquery=(experimental+AND+study+AND+design)&bdata=JmRiPXBzeWgmY2xpMD1GVCZjbHYwPVkmY2xpMT1SViZjbHYxPV

These search terms could be linked to personal information, such as user name, email or IP address.

Springshare's privacy policy does not list chat interactions and the associated referring URL as "Customer Data," however it may be argued that the category Customer Data also includes search terms. Search terms are much less sensitive than other types of data they collect from chat widgets regardless of database involvement. Springshare posts their stance on patron privacy via their privacy policy and statement of compliance with the General Data Protection Regulation law. These documents state the company's refusal to share or sell customers' data. While the risk of personal data exposure through in-database chat sessions is low, experts in software interface communication may be able to more conclusively state the level of risk. Privacy audits taking place in many academic libraries in the United States could include further investigation of these intersections.

APPENDIX:

Full Description of Figure 2. Top five performing chat widgets since proactive chat implementation.

The five widgets that produced the most chats during the period of May 2017 to May 2019, in descending order are:

In-database proactive, which had 1511 chats, accounting for 27.4% of all chat interactions

Ask a Librarian page, which had 1103 chats, accounting for 20.0% of all chat interactions

EDS Discovery, which had 803 chats, accounting for 14.6% of all chat interactions

Homepage, which had 795 chats, accounting for 14.4% of all chat interactions

WMS Discovery, which had 624 chats, accounting for 11.3% of all chat interaction

Full Description of Figure 3. Chat transactions originating from stationary widgets and in-database proactive widget.

Period A (July 1, 2016 – May 2, 2017)

2254 from the stationary widgets

0 from the In-database Proactive Chat widget

2254 total chat transactions

Period B (July 1, 2017 – May 2, 2018)

1856 from the stationary widgets

992 from the In-database Proactive Chat widget

2848 total chat transactions

Period C (July 1, 2018 – May 2, 2019)

1677 from the stationary widgets

425 from the In-database Proactive Chat widget

2102 total chat interactions

Full Description of Figure 4. Chat interactions for the Full Time Equivalent (FTE) student enrollment metric by year.

Chat interactions for the Full Time Equivalent (FTE) student enrollment metric by year:

2013 is 0.108

2014 is 0.115

2015 is 0.121

2016 is 0.11

2017 is 0.129

2018 is 0.119

MisinfoDay:

» Bringing Media Literacy to High School Students, Teachers, and Librarians

Students discuss confirmation bias with facilitators during "Why Your Brain Loves Fake News" workshop. Photo from UW Information School, photography by Doug Parry.

BY LIZ CROUSE AND JEVIN WEST

In March, the University of Washington iSchool held the first ever MisinfoDay, an inaugural event meant to help teens navigate the misinformation landscape. We wanted to create an event where high school students, teachers, and librarians could engage with university librarians, faculty, and students to learn about misinformation campaigns, how to verify questionable information, and how cognitive biases can affect their response to information. Our goal is to create a template so that other schools can host their own MisinfoDay.

After reaching out to high school teachers and librarians in the Seattle area, we ended up with over 150 students, mostly juniors and seniors, from four different public schools. The majority were from the Seattle area, but eleven students came with their school librarian all the way from Toledo, WA, a town two hours south of Seattle. A handful of teachers and librarians from other Seattle schools also came on their own, without any students, to see what they could learn and take back to their classrooms.

Our schedule, below, was a mix of presentations by university faculty and guest speakers and small group workshops led by UW librarians. In designing the schedule and workshop plans, we drew on Jevin West and Carl Bergstrom's Calling Bullshit course, Mike Caulfield's Web Literacy for Student Fact-Checkers, Stanford History Education Group's research on how fact-checkers operate, and KQED Learn's Above the Noise. In addition to our speakers and workshop leaders, we had many other student and staff volunteers from the iSchool and College of Education at the event to engage with the students and help things run smoothly.

In the spirit of stepping outside your bubble, a crucial step in the fight against misinformation, we asked students to work with people from different schools during the workshop activities and to sit in mixed groups during the presentations.

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Students investigate a questionable headline during "Fact-Checking Tips & Tricks" workshop. Photo from UW Information School, photography by Doug Parry.

MISINFODAY SCHEDULE OF EVENTS

Presentation: Mis/Disinformation 101 What is misinformation? Disinformation? How much is out there? How does it spread – and why do people create it in the first place? UW professors will teach you about the current state of misinformation in the US.

Workshop: Fact-Checking Tips & Tricks Learn tips for fact- checking and try your hand at verifying some articles and social media posts.

Presentation: Data Tracking & Visualizations See how your data is tracked online, then learn the hallmarks of misleading data visualizations to watch out for.

Workshop: Why Your Brain Loves Fake News Learn why your brain falls for fake news and what you can do about it.

Presentation: Ask the Experts Panel Hear from a panel of experts from Snopes, The Seattle Public Library, and UW about their work. Come with questions about misinformation, fact-checking, confirmation bias, and more.

The day was a success. Students were engaged, teachers gave positive feedback, and we already have schools asking to be put on the list for next year.

RESULTS

In addition to the workshops and presentations, we also set aside time at the beginning and end of the event for students to complete a pre- and post-survey. Here's what we found:

- **Students see the spread of misinformation as a significant problem.** When asked to rate the issue on a scale of 1 (not a problem) to 5 (a huge problem), most students rated it a 4 or 5 at the start (84 percent) and end (97 percent) of the event.
- **Most students reported increased confidence in their ability to verify questionable information.** When asked to rate their confidence from a 1 (not confident) to 5 (very confident), the vast majority – 82 percent – indicated that they had increased confidence in their verification skills after the event, with a little over half of students increasing their rating by 1 (going from a 3 to a 4, for example) and about a quarter increasing their rating by 2.
- **More students displayed a "check the source" mentality after the event.** When asked whether they would trust the information presented in two social media posts, students indicated they would

Vinny Green, VP and Co-owner of Snopes, speaks to students during "Ask the Experts" panel. Photo from UW Information School, photography by Doug Parry.

» **Since the event, we've heard inspiring stories of students and teachers taking what they learned back to their own schools. One example came from the students from Toledo, who, with the help of their librarian, led a MisinfoDay assembly for their school to share what they learned at the event. Another came from a teacher that attended MisinfoDay on his own. He used the resources highlighted at the event to create a unit for 11th graders that asked them to become experts in one aspect of evaluating information and then teach these skills to 9th graders as their final project.**

consider the source, content, or both when making their decision. However, in the pre-survey, more students commented on the content of the post when making their decision, saying either that it seemed too extreme or that it aligned with their previous knowledge, while in the post- survey more students commented on the source of the post, saying that they weren't familiar with the publisher listed or that they knew it to be untrustworthy.

- **Students haven't used—or heard of—fact-checking sites.** Seventy-seven percent of students listed checking multiple sources as a strategy they would use to verify questionable information in the pre-survey, but none of them mentioned any fact-checking sites (only 13 percent mentioned a specific resource at all). In one of the workshop sessions, when asked if they'd heard of Snopes, Politifact, or FactCheck.org, all twenty-five students indicated they hadn't heard of any of them. After participating in the fact-checking workshop and hearing from the co-owner of Snopes during the "Ask the Experts" panel, 90 percent of students said they would check multiple sources to verify questionable information and about a third of that group said they would use a fact-checking site like Snopes.
- **Students needed more time for processing and questions.** We had so many great activities and speakers that we wanted students to engage with that we packed our schedule too tightly. In the event feedback, many students said the event felt rushed and that they ran out of time for some activities. They asked for more time to process information and ask questions of the speakers and workshop leaders. Next year, we'll build in more time for students to engage with the presenters and materials on their own terms. This will mean letting go of some activities. To help prioritize, we hope to work with high school students in designing the event so that we can include the activities most meaningful to them.
- **Students wanted a more interactive event.** In designing the event, our aim was to include a mix of presentations and hands-on workshops so that students could learn from experts in the field and discuss and practice different strategies themselves. While many students said they liked the speakers and workshops, many also said they wished there were more interactive elements. Students wanted to see the presenters engaging with them more – potentially through questions, polls, or other forms of audience participation – and seemed to enjoy the workshops that focused on achieving a goal, like investigating a questionable claim, over the ones that focused on more general discussion of an issue.

MISINFODAY 2020 AND BEYOND

Since the event, we've heard inspiring stories of students and teachers taking what they learned back to their own schools. One example came from the students from Toledo, who, with the help of their librarian, led a MisinfoDay assembly for their school to share what they learned at the event. Another came from a teacher that attended MisinfoDay on his own. He used the resources highlighted at the event to create a unit for 11th graders that asked them to become experts in one aspect of evaluating information and then teach these skills to 9th graders as their final project.

We plan to hold MisinfoDay again next year. In the spirit of expanding the reach of these important skills, we invite you to join us. If you're excited by this idea, please consider participating in our event, or, even better, hosting MisinfoDay in your own community. Ideally, this would be hosted on the same day in the spring each year. We're working on creating a website to share our lesson materials and presentation videos and any materials from other groups willing to make their materials freely available to others. We invite you to use this resource in your planning.

Please feel free to contact us if you have further questions or if you want to brainstorm ideas for your own event. ■

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The Five Laws of OER

» Observations from Ranganathan

BY TALEA ANDERSON, JYLISA DONEY, BETH HENDRIX, JESSICA MARTINEZ, RICK STODDART, & MEGGIE WRIGHT

INTRODUCTION

The expense of textbooks and other course materials can constitute a significant portion of students' budgets. With costs often exceeding $1,000 per year, it is not surprising that many students choose to simply forgo purchasing them. Because doing without the necessary course materials can be a roadblock to student success, academic libraries are addressing this issue by working with faculty to create more affordable materials for their students through the development of open educational resources (OER).

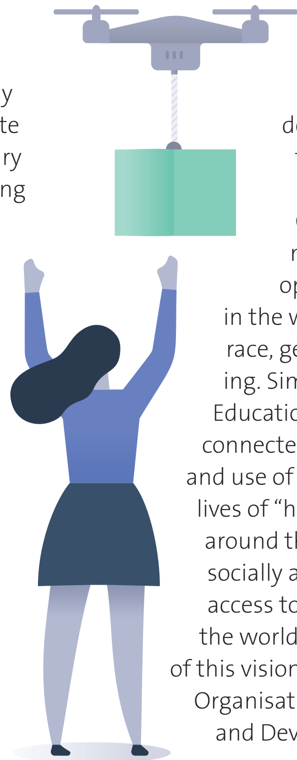
OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or repurposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge (Atkins, Brown, & Hammond, 2007, p. 4).

Although a relatively new initiative in academia, OER align well with the mission of academic libraries and their culture of equity and access for all library users. OER also meet the standards for library services set forth by S.R. Ramamrita Ranganathan (1892–1972) in his foundational publication, *Five Laws of Library Science* (1931).

Known worldwide for his fundamental thinking in the field of library and information science, Ranganathan was a mathematician and librarian from India whose most notable contributions were the development of the first major faceted classification system, colon classification, and his *Five Laws of Library Science* (1931). The five laws, which form Ranganathan's philosophy of library service, have been adapted widely as the field has developed new technologies and methods. These brief statements form a framework that has made a lasting impression on the field of library science and continue to serve as a model for library organizations today (Ranganathan, 1931):

1. "Books are for use." Ranganathan's first law addresses user access to library materials.
2. "Every person his or her book." The second law proposes that libraries serve all people, and are therefore responsible for adding materials to their collections that fit the range of information needs and views of their users.
3. "Every book its reader." This law suggests that each item in a library has an individual or individuals who would find that item useful.
4. "Save the time of the reader." The fourth law proposes that all users should be able to easily, quickly, and efficiently locate the resources they need.
5. "The library is a growing organism." This law implies that libraries, as institutions, are continually changing and that library materials, methods, and facilities should be updated over time.

The simple wording and essential values of the Five Laws have facilitated reinterpretation and reinvention as libraries have embraced technological innovations and new techniques to address users' needs. Since the advent of the World Wide Web in the early 1990s, numerous researchers have successfully repurposed the Five Laws to relate to contemporary aspects of library and information science, including distance education (Mishra, 1998), web page design (Croft, 2001), information architecture (Steckel, 2002), digital libraries (Satija, 2003), online electronic journals (Khode & Khode, 2011), and the social construction of technology (SCOT) framework (Carr, 2014).



The best known interpretations of Ranganathan's laws are "Five New Laws of Librarianship" by Michael Gorman (1995) and "Application of Ranganathan's Laws to the Web" by Alireza Noruzi (2004). Gorman (1995) considered how Ranganathan's laws applied to the challenges of librarianship and the future of libraries:

1. Libraries serve humanity;
2. Respect all forms by which knowledge is communicated;
3. Use technology intelligently to enhance service;
4. Protect free access to knowledge; and
5. Honor the past and create the future. (pp. 784–785)

Noruzi's (2004) adaption of the *Five Laws* simply replaced the word *book* with *Web* to describe how, like libraries, the central mission of the Web is to support the information needs of its users. In the spirit of that same mission, our aim in this article is to investigate the ways in which OER support the information needs of the academic community by reducing barriers to access in higher education.

LAW #1: EDUCATIONAL RESOURCES ARE FOR USE

A core tenet of open education is that access to information is a basic human right. The United Nations Educational, Scientific, and Cultural Organization (UNESCO, n.d.) posited this belief when it coined its definition of OER at the 2002 Forum on the Impact of Open Courseware for Higher Education. UNESCO supported the development of freely accessible educational materials in the belief that "universal access to high quality education is key to the building of peace, sustainable social and economic development, and inter- cultural dialogue" (UNESCO, n.d.). UNESCO therefore regarded OER as an important development in opening educational opportunities to every person in the world regardless of class, race, gender, or economic standing. Similarly, the Cape Town Open Education Declaration (2007) explicitly connected the increased development and use of OER to improvements in the lives of "hundreds of millions of people around the world" who would benefit socially and economically from greater access to information. Groups across the world quickly signed on in support of this vision of universal education; the Organisation for Economic Co-operation and Development (OECD), the Commonwealth of Learning, the Asia-Pacific Economic Cooperation, Carnegie Mellon, MIT, the Gates Foundation, the Hewlett Foundation, OER Africa, the Scholarly Publishing and Academic Resources Coalition (SPARC), and many others provided prominent backing.

Open education challenges the notion that education should be privatized and corporatized, instead contending that information should be accessible for use by all. OER have emerged in the context of reduced funding for public education. Universities and researchers have been pressured to take on corporate sponsorships or seek additional funding by other means (McCluskey, 2017). Some have argued that education should be completely privatized per economist and philosopher Adam Smith's vision, and that this move would improve services for student "customers" (Stanfield, 2012). However, proponents of open education have noted that textbook publishers are particularly adept at exploiting the lack of choice in the supposedly capitalistic market surrounding education (Popken, 2015). Further, in any market built on socioeconomic inequity, poorer students will still struggle to receive an education (Paulsen & St. John, 2002; Provasnik & Planty, 2008). In fact, OER proponents suggest that, as a general population, students are particularly sensitive to cost and often choose not to purchase expensive textbooks. Indeed, survey results indicate that a majority of students report choosing not to purchase textbooks on at least one occasion due to cost: a choice that students foresee negatively impacting their course outcomes (Florida Virtual Campus, 2016). Therefore, open education attempts to make education accessible to all by removing cost barriers for course materials.

LAW #1 IN PRACTICE

- Libraries can support increased use of educational resources by creating, backing, or expanding OER initiatives.
- Libraries might usefully reallocate resources to support OER initiatives given the close match between library mission and open education, both of which seek to support equal access to information.

LAW #2: EVERY STUDENT THEIR EDUCATIONAL RESOURCE

If the first tenet of library science as connected to OER proposes that education should be accessible to all, it would follow that the second tenet requires libraries to make available the books and materials required for this education. To accomplish this in the context of Ranganathan's second law, academic libraries must first identify who their community is and determine whether or not library collections and collection development policies truly meet community needs (Connaway & Faniel, 2014, p. 32). Students' access to required and recommended course materials constitutes an unmet need in the academic library community that can be addressed with OER.

Students consistently express concern over their ability or inability to purchase required and recommended course materials, as well as how these purchase decisions may impact their grades (Senack, 2014). Over time, higher education institutions and academic libraries have started to recognize the substantial cost and access barriers students face when attempting to acquire their required and recommended course materials (Okamoto, 2013; Seaman & Seaman, 2017). Individual faculty members and instructors also recognize that cost is an important consideration for students, with 89% of respondents to a recent survey stating that cost is either "important or very important" when they select materials for their courses (Seaman & Seaman, 2017, p. 9). In terms of cost, the National Association of College Stores (n.d.) estimated that, on average, in 2017–2018, required course materials and technology/supplies cost students $484.00 and $612.00, respectively. In 2018–2019, the College Board (2018) estimated that books and supplies cost students between $1240.00 and $1440.00. In 2018–2019, both Lane Community College (n.d.) and the University of Idaho (n.d.) estimated that students would spend more than $1200.00 on books and supplies, while Washington State University (n.d.) estimated a cost of $960.00 for textbooks alone. Textbook costs not only affect students' finances; these costs may also impact whether and how students choose to purchase course materials. Results from a recent survey of faculty and instructors indicate that 64% of respondents believed "that less than 90% of their students" purchased the course textbook(s) (Seaman & Seaman, 2017, p. 12). When attempting to purchase textbooks for their courses, students often report the need to purchase textbooks from sources other than campus bookstores, acquire used copies of textbooks, rent textbooks, share textbooks with other students, use a library copy of the textbook (if available), use older editions of course materials, and delay purchases or avoid purchasing the textbooks at all (Christie, Pollitz, & Middleton, 2009; Donaldson, Nelson, & Thomas, 2012; Florida Virtual Campus, 2016; Senack, 2014).

Historically, some academic libraries have maintained that textbook purchases are a student's responsibility and have created policies that prohibit their purchase with library funds or their request via interlibrary loan (Gibbs & Bowdoin, 2014; Murphy, 2013). However, in recent years, many libraries have worked to address cost and access barriers by creating course reserves programs. These programs often work directly with faculty and instructors to make at least one copy of a course textbook available in the library; some libraries even use their own collection development budgets to purchase required textbooks from campus bookstores and place them on reserve (Celik & Peck, 2016; DeMartini, Marshall, & Chew, 2018; Greiner, 2012).

Just as Ranganathan proposed that libraries should purchase the costly and often inaccessible reference works that would be used frequently by their patrons (Ranganathan, 1931, p. 280), academic libraries' support of course reserves reflects a renewal of the second law and provides a pathway for its connection to OER. Expanding the second law to reflect "every student their educational resource" requires academic libraries to challenge the concept of "[text]books for the chosen few" (Ranganathan, 1931, p. 74), e.g., those who can afford them, those who can purchase them before they are sold out, and those who can access them in a format that meets their needs.

One way that academic libraries can advocate "every student their educational resource" is to redefine their relationships with faculty and instructors and offer support during the course material adoption process (Okamoto, 2013). Surveys show that the majority of faculty members and instructors need more information about OER (Belikov & Bodily, 2016, p. 239; Seaman & Seaman, 2017, p. 16) and that they have various concerns related to the findability, availability, quality, and usefulness of OER for their courses (Belikov & Bodily, 2016, p. 239; Martinez, Doney, & Stoddart, 2019; Seaman & Seaman, 2017, p. 30). Librarians can situate themselves as allies in the course material adoption process by advertising how they can help faculty and instructors find high-quality OER that meet their students' needs (Martinez et al., 2019), while also addressing faculty and instructor concerns about resource availability and quality (Seaman & Seaman, 2017). Another way to ensure "every student their educational resource" is to encourage OER adoption at all course levels. OER creators and publishers initially developed the majority of their course material offerings for "large enrollment introductory level courses" that would have the greatest impact on the most students (Seaman & Seaman, 2017, p. 32). However, students in advanced, discipline-specific, and upper-division courses also have a need for OER. Course material adoption in these situations may not be as streamlined as selecting a premade OER. Librarians may need to collaborate with faculty members and instructors to support their revision of existing OER or even their creation of new OER. Many faculty members and instructors do not have prior experience with the OER creation process. If librarians are committed to "every student their educational resource," they will need to find ways to support faculty and instructors as they negotiate new processes and potentially establish collaborative relationships with other campus entities, such as centers for teaching and learning.

Ranganathan's second law requires that libraries serve all patrons, provide access to collections that represent their needs, and find ways to eliminate as many restrictions to access and availability as possible (Connaway & Faniel, 2014, p. 26). If academic libraries still see "every reader their book" as a relevant guiding principle, libraries are compelled to view course materials as another aspect of library collections. If academic library communities need these resources, OER offer a clear way to challenge cost and access restrictions so that all students can

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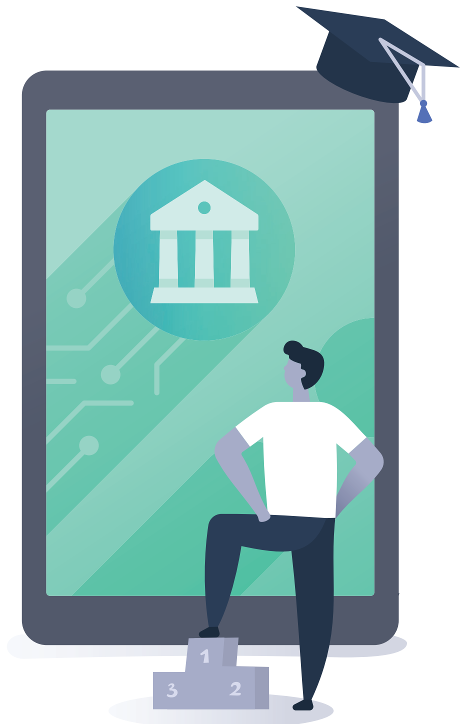
acquire and use the educational resources required for their courses.

LAW #2 IN PRACTICE

- Libraries can challenge students' cost and access barriers for educational resources by advocating OER adoption and continuing to support course reserves.
- Libraries can encourage faculty and instructor use of OER by serving as allies throughout the adoption and implementation process.

LAW #3: EVERY EDUCATIONAL RESOURCE ITS STUDENT

The third law of library science, "every book its reader," focuses on the intersection of discoverability, equitable access, and the variety of information formats. Ranganathan concentrated this law on the physical object of the book, intending for library materials to be relevant to all members of a community. In many ways, this is the idea that patrons can see themselves within a library's collection. By seeing herself within a library's collection, a patron can find an item of interest, no matter how esoteric. This extends to Ranganathan's advocacy for an open stacks design, which allows patrons to physically locate the part of the library that interests them. Specifically Ranganathan called this "the open access system," wherein a patron "is permitted to wander among the books and lay his hands on any of them at his will or pleasure" (Ranganathan, 1931, p. 300). In this manner, and through the lens of Ranganathan's third law, the library's collection then becomes a more accurate mirror of the community it serves—addressing the needs, interests, and culture from all vantages large and small—and the patron is free to discover the collection without impediment by library design or other concerns. Therefore, every book does indeed have its reader or user. Similarly, the idea of "every OER its reader" is not only a call for open access, but also a reminder that OER are intended to serve the needs of multiple communities. The ability to remix and reimagine content aids in allowing OER to truly reflect cultural, learner, disadvantaged, and disabled learning needs. In other arenas, Ranganathan's third law has been reimagined as a call for format plurality, as not only "every book," but also every me- dium (Simpson, 2008) or every piece of technology (Noruzi, 2004) its own user. In light of format plurality, "every OER its reader" suggests that OER should be agnostic to format, medium, or



platform and made available in a multitude of modalities to increase access and accommodate learning preferences. The third law, therefore, frames OER as necessarily portable across devices and formats to meet users where they are.

In summarizing early conversations around OER, Joyce (2006) addressed particular aspects of OER that speak to the idea of every OER its reader. In working through defining what qualifies as an OER, Joyce (2006, p. 6) identified aspects such as file formats that "everyone can open, copy and paste from, and edit content in, without needing to install proprietary software" as desired qualities for OER. For example, even though OER text might be open, if a user is required to use proprietary means of access via a learning management platform (e.g., Blackboard), viewer/editing tool (e.g., Adobe), software (e.g., Flash), or even access it via computer at all, this calls into the question the openness and accessibility of the content. In a summarizing report to the Hewlett Foundation, Atkins et al. (2007, p. 26) noted the need for object granularity and "object format diversity" to ensure interoperability across devices. In making every OER available to its user, issues of technological infrastructure, format accessibility, and user preference must be addressed to truly consider OER open and accessible to underserved and diverse populations.

Petrides, Levin, and Watson (2018) proposed the CARE Framework as a "set of values and collective vision" to guide OER work and development to better meet the needs of learners and educators. The CARE framework is made up of four elements:

- Contribute: OER stewards actively contribute to efforts, whether financially or via in-kind contributions, to advance the awareness, improvement, and distribution of OER;
- Attribute: OER stewards practice conspicuous attribution, ensuring that all who create or remix OER are properly and clearly credited for their contributions;
- Release: OER stewards ensure OER can be released and used beyond the course and platform in which it was created or delivered; and
- Empower: OER stewards are inclusive and strive to meet the diverse needs of all learners, including by supporting the participation of new and non-traditional voices in OER creation and adoption (Petrides et al., 2018).

The CARE framework highlights elements relevant to the idea of every OER user. Specifically, when articulating aspects of release, Petrides et al. (2018) contended that OER should support "the broadest possible use and collaborative revision and remix of materials over time. This includes providing tools to allow users to download and share content beyond the course or platform in which it was created or delivered." Making OER available across platforms and modalities informs the 'empower' aspect of the framework in that

> by reducing the traditional barriers to creating and sharing resources and with a commitment to conspicuous attribution, the OER movement benefits and is itself enriched from the broad participation of individuals seeking to share their expertise and contributions with others. In turn, this commitment to new and non-traditional voices will help the OER movement to better serve a more inclusive and diverse set of educators and learners (Petrides et al., 2018).

As libraries are stewards for their collections, making materials available to and reflective of their community of users, every OER its reader is a tenet to guide thoughtful and intentional OER creation and adoption to meet all learner needs.

Every OER its reader suggests that, as educators continue to build and make available learning objects, they must take into account many considerations around technology and diversity. The openness of OER is in the spirit of Ranganathan's third law. While Ranganathan advocated strongly for the idea of an "open access library" within the context of his time, the sentiment remains the same: OER and libraries need to remain open as learning objects for patrons to fully realize their potential. In order to best meet the expectations of equitable and inclusive access to education, deliberate and intentional design are essential concerns alongside the development of subject content. Frameworks such as CARE and other best practices for accessibility and open access can serve to truly enable every OER its reader.

LAW #3 IN PRACTICE:

- Libraries can advocate for the multiplicity of OER formats to accommodate learning preferences and technology access (technology agnostic).
- OER characteristics and content should mirror the communities they serve (community driven).

LAW #4: SAVE THE TIME OF FACULTY AND STUDENTS

Ranganathan's fourth law of librarianship states that resources should be easily discoverable, findable, and accessible. This is one of the greatest challenges facing the widespread adoption of OER on college campuses. Simultaneously, time is one of the reasons that OER use is so important. Many researchers have asked faculty and instructors from institutions of higher education about the barriers they face when contemplating the use of an open textbook in their classroom. In many of these studies, respondents identified time as a major barrier. However, while instructors are faced with the decision to sacrifice some of their precious time to lower the cost of education for students, students are faced with the decision of whether to brave their classes without a textbook because they cannot afford one. The mission of academic libraries is to help both students and faculty succeed, and one of the most pressing challenges today is the cost, in both money and time, necessary to provide students with textbooks and course materials.

Students face many obstacles to success when they cannot access a textbook. Due to the exorbitant cost of textbooks, many students do not buy the textbooks; this can result in earning poor grades or choosing to take fewer classes overall, extending

the time they are in school (Hilton, Fischer, Wiley, & Williams, 2016, p. 2). Thus, it would make a significant difference for these students if they had access to textbooks for all their courses. They would not waste their time in a class they were ill-prepared for or spend longer in school as a result of the need to spread out their course load to afford textbooks. Delimont, Turtle, Bennett, Adhikari, and Lindshield (2016, p. 24) have suggested that "it may be that increasing student access to learning materials is connected with their increased academic success" and that OER could be the key to higher rates of student success. Both faculty and students have stated that the student experience is better and more successful because of OER's ease of access and availability (Bliss, Robinson, Hilton, & Wiley, 2013; Delimont et al., 2016). When students have textbooks the moment they need them, they are more academically successful, meaning that OER, with their free and convenient access, are the perfect solution.

The use of OER entails four main *time* barriers: (1) the time it takes to find OER, (2) the time it takes to evaluate OER, (3) the time it takes to create OER, and (4) the time already invested in another textbook or teaching material. When considering adoption:

> Faculty must not only locate OER, but also evaluate their appropriateness for the given course or lesson they are intended to support, the amount of revision or adaptation that is required, and the overall quality (i.e., accuracy and comprehensiveness) of the resources, and faculty report that this is a particularly time-consuming task (Colson, Scott, & Donaldson, 2017, p. 281).

When Ranganathan (1931) wrote his fourth law, his focus was on open access stacks versus closed stacks; he posited that letting people find their own books saves the time of library staff, as well as patrons. This is almost the exact opposite of open access today, where an overabundance of OER can be overwhelming and difficult for faculty members to navigate. The uncurated and unedited expanse of the Internet is very different from the neatly organized stacks of a library, making it difficult to find the best educational resource for a class. Faculty members also reported needing more time to evaluate OER because many had not been through a review process, and that they did not have enough institutional support to spend time evaluating a curriculum and adopting a new textbook, especially an open one. An engineering faculty member, for example, reported that they "intend to spend the time seeking out, evaluating, and adopting some of these resources once they obtain tenure" (Belikov & Bodily, 2016, p. 241). Perhaps by that point, though, this faculty member will already be accustomed to the textbook used in the intervening years and decide not to change to OER.

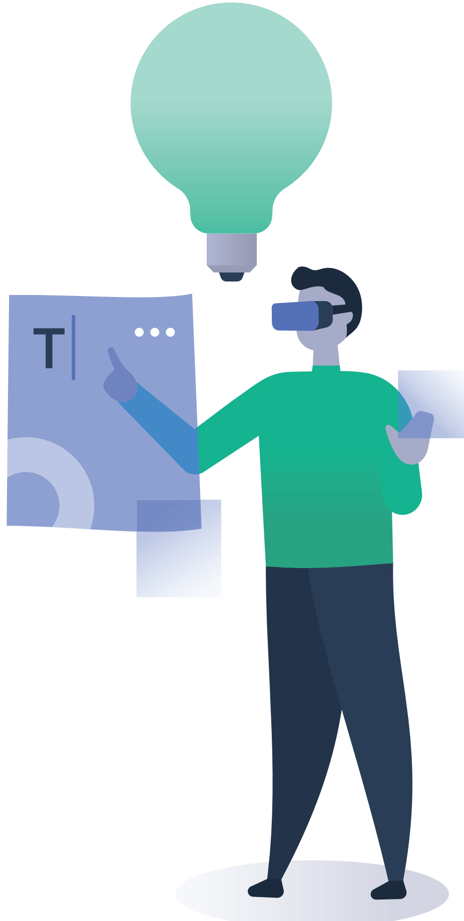
The time invested in a textbook or course material is an understandable and significant reason faculty members do not choose to use OER. Delimont et al. (2016, pp. 9–10) reported that "the primary reason for preferring a traditional text was that he/she has taught the course for many years, refining it over time, and so it was not difficult to teach with the textbook." This is perhaps the biggest challenge to overcome, because there is little incentive either the library or the university can provide that can compare to several years of effort and knowledge being poured into a textbook, syllabus, and learning materials. This is a good reason to target efforts for OER use at newer faculty members and teaching assistants. If they begin their instruction careers with OER, they will never have to forsake years of effort for the cause of saving students money.

If there is not an established OER for the course an instructor is teaching, or if what exists is too broad or narrow in scope, faculty members must create their own material. Because universities rarely provide extra time or a reduced teaching load to support instructors in creating open educational materials, providing these would be a major incentive for OER adoption. Aside from all the time it takes to write a textbook, faculty have also "noted that they needed or acquired special knowledge to develop the resource" (Delimont et al., 2016, 9). The time it takes to create an original OER is significant and requires a great deal of dedication on the part of the faculty.

Today, just as Ranganathan first suggested in 1931, libraries could save the time of the reader through the creation of user-centered systems and process improvements for adopting OER. The first way libraries can promote OER is to incentivize their use. A few colleges and universities offer programs that provide financial compensation and curricular support for time spent creating and evaluating OER. Libraries are also well situated to help make OER more discoverable. A research guide, workshop, or helpful email can go a long way in reminding faculty and instructors that there are lower-cost options available for their courses. Libraries can also support OER organizations like OpenStax and Merlot, which make finding an applicable OER more accessible. These sites also share evaluations, which can help convince a skeptical instructor that this free textbook is of good quality. In the end, vocalizing support for OER and encouraging universities and colleges to support OER at the institutional level is the best action libraries can take. Many faculty members have stated that "institutional support for the evaluation and adoption of OER would increase their likelihood to adopt OER" (Belikov & Bodily, 2016, p. 245), which is a logical and unsurprising claim. With a limited amount of time, it makes sense to focus on institutional priorities first.

LAW #4 IN PRACTICE

- Libraries can support the discovery and adoption of OER by promoting top resources and repositories. Libraries can also work to make evaluations of OER more accessible, which improves their credibility.
- Libraries can incentivize the use of OER by providing institutional support and programs with funding and assistance for the creation, evaluation, and adoption of OER.



LAW #5: OER ARE GROWING ORGANISMS

Ranganathan's fifth and final law is that "a library is a growing organism." The fifth law differs from the previous four in that it "enunciates a fundamental principle that should govern the planning and organisation of libraries" (Ranganathan, 1931, p. 382). Ranganathan identified two ways in which an organism grows: in terms of size and in terms of variation/evolution. In the context of libraries, the former is straightforward. In a healthy library organization, collections, facilities, and staff will all grow. Librarians should include growth projections in their long-range planning. While the space constraints described by Ranganathan still impact many of today's libraries, these concerns have been lessened to some degree by the shift to digital file storage, such as integrated library systems and digital collections of e-books, periodicals, streaming media, etc.

As far as evolution is concerned, Ranganathan provided the example of the shift from chained books in the medieval era to libraries with circulating collections in the early twentieth century. Contemporary variation in libraries can be seen in library types (e.g., a public library versus a research university library). The principle of the library as "an instrument of universal education" (Ranganathan, 1931, p. 415) serves as the common thread throughout differing iterations of libraries.

While Ranganathan's fifth law discusses the library organization as growing and fluid, books, periodicals, and card catalogs provide a type of physical stability that may not be present in today's digital collections. For example, even though physical collections may ebb and flow during acquisitions and weeding processes, digital collections can be changed more suddenly based on licensing agreements and new or lapsing subscriptions. Digital resources, which may resolve many of the space concerns discussed by Ranganathan, also introduce the issue of impermanence.

OER are most often found in a digital format. To users who prefer print materials, this can make OER unattractively nebulous. Unlike other digital resources, libraries do not need to negotiate or pay for OER subscriptions (although for-profit OER companies do exist). However, access to OER can still be lost if the library does not have its own copy. The digital, space-saving nature of OER also reduces the incentive to weed a collection. If not adequately maintained, it is easy for an OER repository to become cluttered with many broken links and out-of-date resources. Librarians who work with OER are already well aware of the challenges of such repositories.

Open licensing of OER complicates the issue of growth further. On the one hand, an open license allows any user to download and retain a copy of the work, which adds potential permanence. The work can also be copied and redistributed ad infinitum, which adds potential growth. However, if and when the open license grants permission for the revision and remixing of a work, the work itself may change in radical, unpredictable ways. Otto (2008) argued against the common metaphor that "ideas are property." Instead, content creators should see themselves as the "parent" of an idea, with the expectation and understanding "that the idea's development is not complete when the parent's act of creation is done" (Otto, 2008, p. 126). Open licenses give creators the ability to rethink the very nature of their intellectual property. By allowing others to create derivatives, copyright holders give their works the freedom to grow and evolve far beyond their initial iteration.

Ranganathan's fifth law also recommends that librarians plan for the growth

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of the library in terms of changing and growing staff. By engaging in OER or textbook affordability initiatives, academic libraries have the opportunity to increase their impact and involvement on campus. Many libraries are recognizing the need for specialized OER librarians to assist users with access to and use of OER. This presents an added challenge for librarians working at institutions where the personnel budget is not a growing organism.

The growth and evolution of the resources themselves may require even greater consideration from librarians. Novel questions, beyond typical reference or research concerns, may arise for a librarian working with OER. For example, should the library host its own copies of OER files or link to copies hosted by other institutions? What should libraries do when the original work is revised? What is the difference between a revision by the original author and a revision by a different author? How should revisions be reflected in the item's record? How do libraries deal with versioning? Who is going to do the metadata and repository maintenance work?

It is useful to consider OER as a growing organism in terms of expanding OER collections, evolving open licensed works, and increasing need for OER-related labor. In framing the fifth law, Ranganathan (1931, p. 382) stated that "an organism which ceases to grow will petrify and perish." While there are many challenges for librarians working with OER, it seems unlikely that the intersection of librarianship and open education will slow down any time soon.

LAW #5 IN PRACTICE

- Libraries can support the discoverability, adoption, and use of OER by updating and maintaining repositories.
- Libraries can further engage with OER by hiring specialized librarians, reworking position descriptions, and engaging with affordability initiatives across campus.

CONCLUSION

Ranganathan's *Five Laws of Library Science* has remained flexible and open to adaptation as new modes of information access, resources, and technology have come into existence. As the previous sections demonstrate, OER break barriers to education by offering low-cost, high-quality educational materials. However, when compared to traditional course materials, OER have a number of adoption and maintenance related challenges that have implications for library practice. Contextualizing OER within Ranganathan's Five Laws, one of the discipline's most enduring philosophies, gives libraries the framework to examine their role in OER and how they can best meet the needs of students. By advocating for OER and making them more discoverable, collaborating with faculty to support OER use and creation, and incentivizing OER use through institutional support, libraries can demonstrate their commitment to making education accessible to all students. ■

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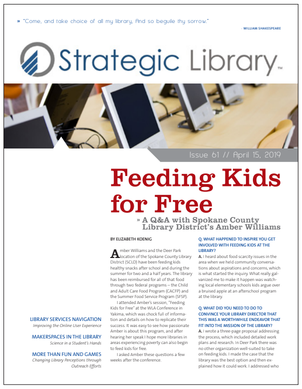

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