Serving the Needs of Performing Arts Students: A Case Study

Jennifer Mayer

abstract: The intent of this case study was to gain insight into the information needs and research behaviors of upper-division performing arts students, and how to best address those needs. This article presents findings from focus group interviews of thirty music, dance, and theater majors at the University of Wyoming in Laramie. The data revealed several themes, including that performing arts students have unmet multimedia, primary, and interdisciplinary research needs and that they struggle with the discovery layer and the catalog. The findings have implications for how library instruction and research services should evolve to serve this population.

Introduction

The Association of College and Research Libraries (ACRL) identified user behaviors and expectations as a top-ten trend in academic libraries in 2012.¹ The motivation to conduct this study was a desire to identify user behaviors and expectations of a unique population—performing arts students—and to use that input to guide enhancements to library services. A main idea framing the study was the concept of problem discovery—that is, how we identify and think about problems to help solve them. In an invited paper, Brian Mathews describes how “the innovative leader . . . aims to discover what they [users] need and then designs solutions that will help advance those interests.”² Problem discovery dovetails with the intention of focus group interviews—input directly reported from library users, which leads to improvement in services.

Research shows that information literacy (IL) instruction is most effective in upper-level courses.³ But even the most talented subject liaison librarian, who provides robust instruction sessions and thoughtful online guides, tutorials, and other services, may not be as frequently utilized by students as hoped. Additionally, subject librarians may fail to meet student research demands due to a lack of knowledge about the students’ actual needs and preferences.

portal: Libraries and the Academy, Vol. 15, No. 3 (2015), pp. 409–431.

Copyright © 2015 by Johns Hopkins University Press, Baltimore, MD 21218.

Concerned about the problem of library disconnects for those students who do not receive adequate disciplinary library instruction or those who do not use library services at all, the author conducted a series of focus group interviews. The use of focus groups was a logical method to obtain qualitative data regarding student information-seeking needs and research behaviors, a way to gather firsthand input to help implement more relevant library instruction and research services. The author of this case study defines performing arts students as upper-division music, dance, and theater majors.

This study is unique due to the disciplinary orientation of the population; however, some findings and principles may apply more broadly to upper-level university students as a whole. The research sought to answer two questions: What are the information-seeking behaviors and research needs of upper-division performing arts students? How can instruction, learning, and research services to these students evolve and improve?

Previous Research

Qualitative research methods such as focus group interviews are becoming slightly more commonplace in library and information science research. However, there is a gap in the professional literature regarding the overarching research needs and behaviors of upper-division performing arts students.

A literature review reveals few studies utilizing focus group interviews to gauge the information needs of performing arts professionals and scholars. A 2010 article by Ann Medaille shared findings from a mixed-methods research project regarding the information-seeking behaviors of professional theater artists.⁴ She explored reasons theater artists seek information, including context, inspiration, learning about productions, and technical information. Michael Olsson wrote about how theater professionals (actors, directors, and others) approach information seeking regarding the works of William Shakespeare.⁵ Chern Li Liew and Siong Ngor Ng investigated how professional ethnomusicologists gather information.⁶

Published research articles describe information-seeking behaviors and information literacy instruction for students in the performing arts. These studies were not conducted solely using qualitative methods; they also focus on one performing arts discipline, on information literacy generally, or on another specific area. Joe C. Clark conducted a survey

... music students have many difficulties and frustrations searching for audio and print music materials.

about the format preferences of performing arts students and found that the majority agreed the library should buy more online music content and that the students currently obtain items for study via sources other than the library.⁷ Kirstin Dougan utilized mixed methods to help determine the information-seeking preferences of music students.⁸ Her results indicated that

music students have many difficulties and frustrations searching for audio and print music materials. Joseph Matson and Anne Shelley shared the results of a survey of undergraduate music students' searching and music purchasing behaviors (which usually started with keyword trial and error at retail sites) to help inform instructional services to them.⁹ Finally, in a non-research study, a librarian shared her observations regarding

information literacy needs gleaned from observing various arts classes, which she found useful in understanding assignment expectations.¹⁰

Researchers have explored the information needs and processes of university students in other creative disciplines, particularly visual arts students. In 2006, Hannah Bennett discussed her work conducting focus groups with studio art students and found students needed support in grant research, image research, and copyright.¹¹ This study adapted four of Bennett's focus group questions. The author intends to add, via this case study, unique insights regarding how to meet a wide range of research needs of upper-division performing arts students in a university setting.

Methodology

During spring 2014, upper-division music, dance, and theater students at the University of Wyoming in Laramie were invited to participate in a series of focus group interviews to help determine their research and information literacy needs. The university's Institutional Review Board (IRB) approved the research proposal in early 2014. The participants for the focus groups were recruited from three senior-level classes in music, dance, and theater. The three faculty members teaching these classes invited their students to attend with the understanding that participation was voluntary. Focus group participants were provided with incentives. All participants received library-branded jump drives, and one randomly selected individual per group received a coffee gift card. The three focus group interviews were conducted between March 18 and April 7, 2014. The discussion sessions occurred in the campus performing arts building. The goal for the number of participants in each session was from six to twelve participants; this numerical range was met. The author conducted three focus groups with a total of thirty performing arts students. The students were all music, dance, or theater majors, and a mix of genders. Each focus group was homogenous in terms of subject major.

The main objective of the focus group interviews was to gather data on the information needs and research methods of these particular student populations: what their research needs are, where they look for information, how they search, and more. The facilitator distributed consent forms and table tents on which the students wrote their first names. The facilitator then read a script detailing the background and purpose of the study and invited the participants to ask questions. In addition to written notes, the investigator used an iPad to record audio for data collection purposes. Each group was asked identical questions, but some follow-up prompts varied as needed (for example, tell me more, what do you mean?) from group to group. Each group answered twelve questions, provided in the appendix. For each group, the specific name of the major substituted for the more generic "performing arts" used in the question template. Each session lasted approximately one and a half hours. Reviewing the resulting data allowed for the identification of themes and action items.

Results

The focus group participants consisted of upper-class performing arts majors. Table 1 provides a description of the participant demographics.

Table 1.
Demographics of focus group participants

Participants	Gender		Class level			Total
	Female	Male	Sophomore	Junior	Senior	
Music	5	2	0	1	6	7
Dance	10	1	2	5	4	11
Theater	7	5	0	1	11	12
Total	22	8	2	7	21	30

The author summarizes the students’ self-identified needs and perceptions of the library. The resulting data are discussed for each performing arts discipline, organized as follows:

- Definitions of disciplinary research, information needs, research approaches, and resources utilized
- Barriers to library research, valued library services, and the library’s role
- Needed information literacy instruction, tools, and services
- Summary.

Music Students

Research Needs and Information Seeking

This section summarizes the music students’ definition of research in the field of music, their research demands, the information-seeking approaches they use, and the resources they utilize.

The group was asked how they define the act of research in music and how they engage in it. The students talked about how music research and interpretation are ambiguous. One stated, “I could research a score and you could research a score and we could have completely different ideas about it, you know?” Another replied, “And we both wouldn’t necessarily be right or wrong, it would be interpretations of the same thing.” One concluded, “You could listen to six different recordings of the same piece and everything’s going to be different, but it is still research, I think that’s a big part of where it differs from other disciplines.” The students agreed that music is one of the more subjective, rather than objective, majors.

The music students discussed how they prepare for a research project. The group generally starts on the Internet and goes to the library later in the research process. Some noted talking to a professor, while others mentioned library databases. Several indicated that they listen to recordings, and a few scan the print scores on the library shelves. Another student uses professional musician forums that contain “everything

violin" and looks to books "written by great violinists about technique, history, stuff like that." It seemed important to this group to locate the work of well-respected musicians, both recorded and written.

The students described music classes and assignments that required information gathering. Courses that required research included music history, vocal pedagogy, and world music. One described the process of researching two music pieces, preparing the score, and having to research instrumentation, performance practice, and scholarly definitions. Students mentioned preparing for their barrier examination, a required examination that allows passing students to go to the next level in their music education. They also described being required to know composers and understand the context of a chosen piece of music.

The music students were asked about the resources they use to gather information. One described his process:

The music students discussed how they prepare for a research project. The group generally starts on the Internet and goes to the library later in the research process ...

I hit *Wikipedia* as a jumping off point, Google depending on what type of project it is, but for musical information history-wise I go straight to *New Grove Dictionary of Music Online*. I don't mess around, because it's got a ton of information, it's also a great starting point composer-wise.

Other students indicated they use the following sources: *IPA* (International Phonetic Alphabet) *Source*, *Choral Public Domain Library*, talking with a professor, *Journal of Singing*, and the *JSTOR* database. A few mentioned the value of primary sources, and one said, "I look for primary sources, you know like the manifestos they wrote, the composers, their actual thoughts or letters between them, I think that's interesting and very valuable, it's really fun to listen to Debussy say, 'I really don't like this.'" According to most participants, primary research is a necessity for musicians.

Barriers to Research and the Value of the Library

The following input relates to barriers with library research, what participants currently find beneficial about the library, and how they see the library fitting into their course of studies.

The conversation turned to music research pitfalls. Students described difficulties using some of the library search tools, such as the "super search" box, which is the starting point for using the discovery layer, Summon, the search interface that enables users to find materials held at our library. One student shared, "Sometimes you type in the name of the composer and a bunch of random medical journals come up, this has nothing to do with quartets . . . I don't know if there was just a way to search string quartets, saxophone quartets, or Beethoven or clarinet, I just feel unless you have a really specific thing in mind you can't find it." Another added, "I used the main box and still didn't find anything. For things that are in the library, it's easier to go through the interlibrary loan system to see what all the libraries have, than to search our library for it." A few

other participants confirmed they also start with the shared consortium catalog as a first stop because it is easier for them to use than the discovery layer or the local catalog.

Additional search difficulties related to multimedia materials. One participant relayed issues finding videos in the library catalog:

I've been trying to search video recordings of operas, but I have trouble retrieving those, getting recordings up to date, like the physical copy . . . I was searching the catalog because I want to see the operas visually . . . and then it says no matches, do I have to go buy it? I'm not going to YouTube because they do not show everything.

Another student also touched on the difficulty of finding music materials in the catalog: "If there were better descriptions of what it was so you don't get there and go, it sounds kind of like it, but turned out to be nothing similar for physical items." Many in the group described their individual problems with using the local catalog to search for music materials.

Other participants identified barriers related to a shortage of certain collection materials or to a lack of library presence on the main university web page. One described the extensive coverage of string quartets and orchestral holdings but noted that the library has few contemporary scores and audios, which many students study. A few commented on the need for more performance practice materials. Finally, the students felt frustrated regarding the recent removal of the prominent library link from the main university page ("Put exclamation points on that one!"), since many of them frequently used the main university page to access the library homepage.

The question was asked, what do they value most about the library as a music student? A common theme in this group of responses was the cost savings the library provides, since the library has scores, audio recordings, videos, and books for free. One stated, "I just love that there are so many things I have access to that I would never have enough money to buy them for myself." Another mentioned the classical music record label Naxos, saying, "Same goes for Naxos . . . having that at our fingertips and not having to go to iTunes and buy it is really nice." The students discussed how "everyone" builds a personal musical library, but that it will never be as vast as what the library offers.

The question was posed, how do you see the library fitting into your course of studies? Students highlighted the sheer number of resources available to them, that the library "is just going to have more, it is a fantastic resource to have." Others talked about the serendipity of finding new materials in the stacks for classes they take outside of music. Yet others spoke to being able to access obscure or out-of-print materials. Finally, a few students said the library experience was part of their learning process; as one said, "You find you can pick out a book you're looking for, and next to it are very similar things and I'm like hmm, I want to read those instead of just one, I think it is very fitting and I think it encourages more learning, and more reading and more studying." Some of the music students find browsing an effective way to locate resources.

II. Instruction, Tools, and Research Services

The next sets of responses are needs the music group identified specifically related to information literacy skills and research services. The investigator asked about the ef-

fectiveness of music-related library instruction. Students brought up the helpfulness of the orientation to the music materials in the physical space of the library during freshman-year instruction. All agreed that an online visual tour of the M call numbers, designating music and books on music, would be helpful both for those who had freshman instruction long ago and for transfer students who need an introduction. Most felt that targeted, short tutorials rather than library visits would be helpful for upper-level research instruction. Two participants mentioned the benefit of asking a librarian for assistance after an instruction session.

When asked about preferences regarding tutorials and other learning tools, such as games, participants had many responses, especially related to tutorials. Students said that they function well online, and so if a tutorial is clear and succinct, they can get through it and figure out what they should do from there. This group of students identified themselves as autonomous self-starters. Another student proposed a tutorial with built-in chat and screen sharing. Another suggestion was to show a brief tutorial about how to get to the relevant music databases with search tips. All agreed an online tutorial on finding music scores would be helpful "if I knew it was out there." In terms of a music score tutorial, several shared that they thought it would be a useful learning tool, not just for music students, but for music faculty, too.

In terms of what research services from the library would be helpful to meet their needs, the students had much to say about difficulties finding scores and audio. They believe a more efficient method for searching for scores and audio is clearly needed. One student has such a difficult time finding music scores that she resorts to buying scores by default.

A transfer student stated that the library's general online tutorial was not helpful to her. She elaborated on how to improve the library IL tutorial for transfer students:

We know how to do that [write a research question] . . . we need to know how to use the databases, what [the consortium catalog] specifically is, what it does, instead of . . . it was more a tutorial on how to write a paper than how to use the library. Also, a little more comprehensive section on the cataloging of music books and scores, that would be helpful.

One student has such a difficult time finding music scores that she resorts to buying scores by default.

The transfer student clearly felt lost and even shared that one of her professors told her to "go figure out the library" on her own.

An identified research need was a short video on comprehensive searching for recordings. Some participants discussed the difficulty of using some of the library databases, "Naxos, it would have to be a programmer thing, maybe enter composer here, enter name of piece here, and then it brought up the names of the recordings and scores." Students in this group praised the search features of popular commercial sites such as Amazon, iTunes, and Netflix.

Regarding the library catalog, a student articulated, "I wish there was a way if you had a certain thing selected . . . if it said, like Amazon, you might like these, if you like this." One volunteered, "'Taste generators' is what they call it on Netflix." She contin-

ued, "I don't know, but I think you would find more things that were pertinent to what you're doing instead of scrolling through page 4 of 5,000 and saying I'm done with this, but you know there's probably something on page 4,000." The music students agreed that both the discovery layer and the catalog are not effective for music-related searching, for any format.

All of the students indicated there is a demand for interdisciplinary research for their music work. The students shared that, in some instances, they need basic rather than technical information (for example, when looking for the physiology of vocal folds, the lower pair of vocal cords that produce sound). Others described the need for a cursory understanding of other areas such as poetry and philosophy: "When I took

philosophy, it blew my mind how much is related to music . . . how they wrote a line can be impacted by history." A few discussed how music fits with other disciplines in terms of usually being the final aspect of a whole movement, following philosophy, literature, and visual art.

To summarize, music students described in detail the problems they encounter when using the library's discovery layer for music materials.

Participants also indicated difficulties searching

the catalog for scores, audio, and video. The music focus group articulated challenges searching streaming audio databases. This group views specific tutorials (finding music scores, how to search music databases) as useful, with interactive features such as chat and screen sharing. They value primary sources. Orientation to the physical music section and how items are cataloged are important to this group. All participants agreed that interdisciplinary research in music is crucial. Publicity is important, all agreed, as well as faculty interaction with and promotion of library services.

The music students agreed that both the discovery layer and the catalog are not effective for music-related searching, for any format.

Dance Students

Research Needs and Information Seeking

This section summarizes the dance students' definition of research in their discipline, their research demands and information-seeking methods, and the resources they use. Participants had a variety of reactions to the question: How do you define the act of research in dance? Many of the dance students described research as a physical and personal experience, in addition to having more traditional definitions of research methods. As one student put it, "We spend a lot of time researching in the studio on our own bodies and creating movement and learning that way, rather than just finding journals online or reading books or you know that sort of thing, it's kind of an all-encompassing research process." Another added, "I think research could go so far as to say when I journal after class when I'm reflecting upon how the movement happened in my own body, that's research on how it happened in a personal way for me." Most of the dancers equated research with personal, kinetic experience and the act of performing on some level.

The students also had a more traditional view of research and talked about entering the broader research conversation with their own voice. Many described using their

“best friend” Google as a starting place. Several students acknowledged how important it is to identify authoritative and credible sources when they conduct research in dance and were wary of sources such as forums and blogs. One asserted, “Unless you know for a fact that person is a scientist or an expert on the subject . . . it’s the only way you can take that into consideration, even if you’re not going to use it in your project, just for other knowledge, but even then that’s tricky business.” Several participants noted the importance of interdisciplinary research in the field of dance and listed the following areas: medical information, kinesiology, social issues in dance, music, pedagogy, emotional and psychological health of dancers, body image, and visual images.

When asked how they prepare for a dance project, the students had a great deal of consensus in their responses. Most use a combination of sources: Google; *Wikipedia*; the university library’s website for articles, journals, and books; and YouTube, which is one of their biggest tools as visual learners. Many agreed that their professors provide much information to them in the form of videos and articles, and one professor taught them how to use the online search engine through the library.

The dance group discussed assignments that required information gathering or research. There were ranges of assignments listed: selecting a focal point of a ballet and writing a paper on it, assignments on alignment and technique, and journaling homework. There were several mentions of a research paper combined with movement and performance, with the research side “to better understand the reasoning behind the movement that I was doing.” Others talked about the need to research for inspiration, including pictures, poems, individual choreographers, and videos. Several revisited the need for interdisciplinary research: one example was a project on dance and film, where the team did “research on characters, urban myths, horror movies, and choreography.” A few of the students focus on dance science and need to do full-blown research papers and learn how to write an IRB proposal.

The dance students were asked which resources they use when gathering information. The dance-specific databases offered by the library got mixed reviews. The students saw the databases as helpful at times, but at other times not as useful. Some students used the discovery layer. Others talked about the usefulness of professional organizations and their resources, such as IADMS (International Association for Dance Medicine and Science), which has a conference, a social media presence, a website, and a newsletter.

The dance-specific databases offered by the library got mixed reviews. The students saw the databases as helpful at times, but at other times not as useful.

Barriers to Research and the Value of the Library

The following section relates to barriers to library dance research, what participants currently find valuable about the library, and how they define the library’s role in their lives as students. Almost all members of the group alluded to the fact that they are not always motivated to do library-related research because their professors often give them all the resources they need to complete their projects. One said, “Our professors are just with us every day talking about it and researching it with us, and it’s just easier because

it's physically in this building." Others talked about difficulties finding information on emerging dance fields and staying current and keeping up with the latest information, asking, "How do you keep up?"

Several participants talked about the difficulties with using the library databases, including dance-focused databases as well as the interdisciplinary databases such as *JSTOR*. Accessing articles created a significant barrier for several dance students, who described difficulty getting the full text of the article after finding the abstract—"Don't tease me," one put it.

The group was asked what they value the most about the library. Some themes became apparent, including great appreciation of the dance DVDs and streaming videos of dance documentaries and performances, "especially because it will be from different venues or companies that I may never have the opportunity to see." The library request service (which retrieves books for patrons) and the interlibrary loan service both received appreciative comments.

The students value research reference services, both in-person and via chat. One student described, "I like the person at the front that you can go up to and say, 'Isadora Duncan—show me what you got,' and then they give you a list and then they explain to you where to go look for that. I like that." Another said, "Chat is really exciting . . . I use it if I have fifteen minutes between class and I'm trying to work . . . or when I'm having a hard time finding an article or something, it's really helpful." Another countered that they do not care for the chat, "But that's just not my personality, like if you're on a website searching and an agent pops up and they say, 'Hi! Can I help you?' I'm like no, just let me do it."

When asked how they see the library's role in their course of studies, the students replied that for group projects the library is a good meeting spot. They also use the library for the resources, such as journal articles, and the instructional role. "I feel it would be a good idea if any time you took a course like your WB or your WC [two writing courses] if just right at the beginning of that semester they have someone come in and just go over, even if it's just a review, yeah, go to the library for this." Students recognized that instruction is most effective when there is a distinct research demand.

IL Instruction, Tools, and Research Services

The next set of responses relates specifically to what would be useful to the dance students regarding library instruction, tools, and research services. Asked about the effectiveness of dance-related library instruction, several valued the search strategies they learned in library instruction sessions but could no longer recall them. "But the weird thing is, I can't remember, if you put things in parentheses it means something else or if you use this or a star or an asterisk . . . I wish I remembered all those little things." Another perceptively discussed the importance of the instruction timing: "I didn't really do a lot of research until my junior year when I started doing research for dance science, I don't think I really did a bunch of dance research projects my freshman year, which is when we took the class, and I kind of forget a lot of the stuff. I think a refresher class would be helpful." A student talked about the challenges of never receiving instruction due to her transfer status.

When asked about preferences regarding tutorials and other educational tools, such as games, dance participants had a wide array of responses. The group was open-minded toward tutorials but also indicated they use online worksheets and preferred working face-to-face with a librarian. As a follow-up to an individual consultation, some of the students highlighted the importance of access to an online worksheet to remind them of the step-by-step processes of research. One said, "I also need . . . the worksheet given to me that gives step one, step two, step three, because I am a visual learner, I have to see it and I have to do it three or four times before it's going to be something I remember how to do." Several said that in addition to being kinesthetic learners, they are visual learners and appreciate pictures on worksheets as visual cues where to click.

Regarding learning games, the dancers were most supportive of online interactive flashcards and quizzes, because those techniques worked well for them in anatomy classes. One student said that if the instruction took the form of a game, it would have to be strictly connected to what she needs to know. One mentioned the importance of timing and that any tools or tutorials would have to be offered at point of need and build on one another. Another countered that she would "rather watch a video about it first, I'd rather just use different learning tools . . . I think it would be nice to have links

Regarding learning games, the dancers were most supportive of online interactive flashcards and quizzes . . .

. . . like, here's a good site for how you can get dance videos or here's a good site for the *American Ballet Theatre Dictionary* and other terminology." The group consensus was that as much online streaming video as possible should be available, and that it was important to learn how to access these collections.

Students were asked what research services from the library would be helpful for their dance information needs. Students disagreed about the format of books. Some wished every dance book in the library were online because it would be a time-saver and they can rarely make it to the library on the other side of campus. Others like having a paper book in front of them but do not have the capacity to carry books all the time.

Several dancers noted they need guidance with in-depth, analytical research. "I guess we are looking at it from a more theoretical point, and you'll find that this dancer is so great, and they were in this ballet, and they dance for this choreographer, well, I knew that, I want to know why their career lasted so long, like how did their body maintain that, and maybe people do not know the answers, but . . ." These individuals acknowledged that engaging with sources in a more sophisticated way, with an analytical research question, was important to them.

In sum, dance students, like many students, commonly rely on Google and *Wikipedia* to gather information. This group identified the high importance of locating quality videos and online sources. There were mixed reactions to the preferred format of books. Students indicated that their professors provide many resources and much instruction; in some cases, instructors provide the bulk of the material. The group at times struggles to find useful results in the interdisciplinary and subject-specific library databases. The students identified several areas that are research challenges: emerging fields in dance, timelines, choreographic influences and connections, how to set up alerts, how to access

the full text of articles, and how to conduct interdisciplinary research for dancers. Dance students responded favorably to online worksheets and to interactive, online flashcards with quizzes to aid learning.

Theater Students

Research Needs and Information Seeking

This section summarizes the theater students' definition of research in their field, research needs and information-seeking techniques they implement, and the resources they utilize. The group gave their definitions of the act of research in theater, and how they have engaged in research. Several discussed research as significantly image-based for theater arts, as well as the interdisciplinary nature of research as a theater major. One specified, "For us it's more than just plays, too, it's sounds, it's visuals, it's history, it's art, it's technology—literally you

... dance students, like many students, commonly rely on Google and Wikipedia to gather information.

have to look at all these different facets." Similar to the other focus groups, this group highlighted the importance of interdisciplinary research to their work.

The theater focus group shared several strategies about how they prepare for a project about which they know little, including asking a professor, going to *Wikipedia*, searching for visuals, doing research about everything related to individual plays, studying interdisciplinary resources (literature, text, history, art, past performances, past acting styles, past costume styles), reading or participating in professional forums, and using SparkNotes, a commercial study aid.

The theater students described assignments they have had that required information gathering or research. Participants described the need to have a solid understanding of whatever play they have to write a paper on, along with learning about the history and other factors to analyze the play. Again, visual images arose as a critical resource. An example was, "In costuming design you have to have a lot of visual research in order to do anything on your projects . . . making things as historically accurate as you can." Stylistic theater and stage makeup were other areas that require visuals for accuracy and inspiration. The need to search for and find relevant monologues is important, especially ones that are obscure or older. One student talked about getting the newest works or musical pieces as challenging because in some instances the songwriters did not actually publish a book.

One student emphasized disconnects between research assignment requirements and reality, in which the professor requires a certain number of print resources and books. "They have to be specifically a certain amount of books . . . sometimes where the online sources are just more specific, shorter and straight to the point . . . where books, they have to embody all of it, and it's actually really hard to get to the point that you need." Another added, "In some ways it's a lot easier for me to find what I'm looking for in a digital source if for no other reason, so that I can search through it, basically . . . as opposed to having to read fifty pages." All talked about time constraints and the need to do research as efficiently as possible.

The students discussed how they approach the information-gathering process. Responses varied from using *Wikipedia* entries and the references listed, to databases such as *JSTOR* and theater databases, to using references from books, YouTube (since “There’s nothing that helps me more than actually seeing something in practice, and video for me is the only way to do that”), to watching plays by accredited production companies such as the British Broadcasting Corporation (BBC), to Google Scholar—where one student mentioned she sometimes only sees a preview of the article, but then can usually get a copy through the library.

Several students agreed that online resources are key for them. One mused, “Sometimes I actually wish the professors would have the same information courses we do and get used to using it themselves.” And, one added, “There are still a lot of professors who really don’t like the idea of Internet sources even though you can go on and find tons of essays and journal articles and everything . . . and they’ll say, well you need five books and only one Internet source, and you’re like, well okay, but these are all legit.” One saw the importance of interacting with sources, rather than finding a numerical, stipulated laundry list of source types. He said that to some professors, “Sometimes it becomes more about the method of research than what you’re actually putting into the paper.” There was consensus among the group that the ability to use library resources from home is a necessary convenience.

Barriers to Research and the Value of the Library

The following input relates to critiques regarding library research, what participants find helpful about the library, and how they see the library fitting into their lives as students. The group shared frustrations they encountered regarding library theater research. One noted that it was not convenient that all drama-related materials were not shelved together; she elaborated that the foreign-language drama materials are on a separate floor. Another commented she wished the library could stay open longer in the evenings. Others are not sure how to evaluate the credibility of online resources they find via Google. Some agreed that it is difficult to locate high-quality images online. For example, one commented, “If you Google ‘medieval dresses,’ you just get hot Halloween costumes instead.” Finding images was a clear need across the theater specialties, from costume and makeup designers, to set designers, to actors and producers.

Other barriers identified included collection issues. “We have a lot of older designers and their drawings, but the newer stuff . . . lighting design, sound design, costume design, books, pictures, their renderings, that sort of thing, we need.” Another stated, “It would be nice if the library had more videos of American plays, I know that’s really difficult to do with copyright laws . . . but that would be awesome if that was in any way possible.” Others described challenges finding the newest plays in the collection.

Theater students next shared what they value most about the library. Students remarked on a wide array of resources, including librarians, the library collections and

Finding images was a clear need across the theater specialties, from costume and makeup designers, to set designers, to actors and producers.

plays, the library space, interlibrary loan, and the chat service. One said, "The fact that we have an actual representative for just our major is really helpful, I can just say help, 'I need help!'" Another enjoys the space and the chat service: "You can find those plays and curl up in a quiet little corner on the fourth floor and just read and get your homework done . . . I also really appreciate the little chat, so I'm like, 'Hello is anyone there, can I have some help?' And they're like, 'Of course you can!'" One student was not aware of the chat service and planned to use it after hearing her peers praise the service.

Other participants talked about how useful the collection of plays is to them. One said, "The selection here is really outstanding, there have been a few cases where I haven't been able to find what I'm looking for, if I can't, [the consortium catalog] is super helpful." Another echoed that she uses the whole "borrow from another library system a lot" and appreciates how fast it is. Others again highlighted the importance of media for them. "I really want to stress the value for me of the media . . . I watch them (plays) while I'm doing homework or while I'm doing things, so I really like that service." Access to the audio and video materials was a recurring priority for these students.

Students had a variety of thoughts about how the library fits into their course of studies. One said he rarely goes to the physical building and exclusively uses the online resources. Others valued the research assistance, one prefers to ask in-person, but most use the chat service.

IL Instruction, Tools, and Research Services

The next set of responses relates specifically to services the students need in terms of information literacy instruction, learning tools, and research help. The students were asked about the effectiveness of theater-related library instruction. One indicated how after the session he felt comfortable contacting a librarian about "what words to put into the theater database and how to get specific enough for sources." Yet another still struggled with finding a musical score with actual dialogue in it but explained that it is easy to get the stand-alone sheet music. One student commented, "I don't think if the librarian had come in, if the professor hadn't set aside that class, honestly I don't know that I would have found all that." Both a transfer student and a student who switched majors to theater did not receive instruction, so this finding pointed out a population not receiving research instruction at all.

When asked about preferences regarding tutorials and other learning tools, such as games, participants agreed that video is key. Many utilize YouTube for performances, but others are pickier because they find the quality lacking, and YouTube videos are not always complete. This group of participants was receptive to tutorials for teaching theater information literacy skills.

Students were asked what tools and services from the library would be helpful for their needs. They expressed interest in a comprehensive source that only contained plays or could be easily scoped to search only plays. One suggested:

If there was a catalog of every play that the library had, so we could just go in and go okay where is this play, let me look for it, or a section of where the author is and all the plays they've written, we can say okay I need an Ibsen play, oh look there they all are, instead of having to type in Ibsen and then all this information about Ibsen or like critiques that all pops up, and no, I just want plays.

The students enthusiastically discussed the possibility of limiting the catalog to search for only playscripts, and another elaborated, "So if in the advanced search if there was a box it just says script or something." Another participant suggested a customizable landing page for theater resources, a search limited only to plays, information about all the new plays, and updates about library news related to theater resources and services. One student summed up the importance of making people aware of the library theater resources, including the existing online guide.

Several suggestions related to the actual collection, including adding more classical and contemporary plays, more female-dominated shows, and award winners, including the Tony Award-winning plays (which the library currently collects) and those nominated for Tonys. The importance of publicity arose again, and one student suggested that important library e-mails be routed through the theater department head, "because all the students pay attention to those." Other desired tools listed included those that would help find historical context and historical photos related to architecture and costumes.

Participants volunteered ways to promote library services and resources. One suggestion was to promote the online theater guide to professors so "they could include those links on their syllabus, here's some helpful links about the library." Several thought it would be a good idea to post the librarian's contact information within the department on one of the call-boards and also to share all the library information with the department office manager, who could in turn point students to various library sources.

To summarize, theater students have significant demands to locate quality and relevant images, both historic and contemporary, in all aspects of theater work. Media are also important to the work of theater students. Students use Google, YouTube, and *Wikipedia*, but seem to perceive these research tools as somewhat unreliable. Interdisciplinary research is valuable to theater students. Costume and scene design students have unmet research demands. Several students mentioned tension between what sources the professor wants versus what is realistically available. Many indicated difficulty in finding plays in the catalog. Better promotion of library services was another identified need.

Both a transfer student and a student who switched majors to theater did not receive instruction, so this finding pointed out a population not receiving research instruction at all.

Discussion

The data from the focus group interviews indicate some unique research needs within individual performing arts disciplines. However, shared themes also emerged. The data provide new insights going forward on the most effective ways to teach information literacy to performing arts students at the University of Wyoming. In addition to informing teaching methods, the resulting data are valuable regarding the development of tools to expedite learning, as well as suggesting ways to improve other future library research services to these students.

Short-Term Actions

The participants identified the following research needs as important: finding and using multimedia; researching primary and interdisciplinary sources; having effective, disciplinary-based search strategies of the discovery layer, local catalog, and subject-specific databases; and learning the best ways to leverage Google Scholar, *Wikipedia*, and other open Web resources. These student researchers described themselves as visual learners.

These identified research needs can be met with several approaches. First, there is a clear need to provide more instruction on how to effectively search and locate credible, complete, high-quality multimedia resources (students identified multimedia as images, audio recordings, videos, and music scores). The need for effective searching, evaluating, and incorporating multimedia could be met with the creation of short tutorials and workshops tailored to using these tools to get the best results. Collaborating with media staff could provide a helpful perspective on how to approach teaching use of these resources.

Both primary and interdisciplinary sources are another concrete need for these students—in addition to performances and original works, written primary sources such

... there is a clear need to provide more instruction on how to effectively search and locate credible, complete, high-quality multimedia resources ...

as interviews and letters are also in demand, as well as information about emerging and obscure artists' works. Instruction sessions focusing on primary sources and partnering with archivists to teach primary source research could help students locate and incorporate primary source materials. An online guide focusing on primary sources in performing arts could also be useful. Students strongly identified needs for instruction in interdisciplinary research

methods and finding sources for their work. Development of an increased focus on how to conduct relevant interdisciplinary research for performing arts majors in individual instruction sessions is one approach. Students indicated that a future workshop on how to do interdisciplinary research in the arts, including medicine, literature, philosophy, psychology, and other fields, would be beneficial.

Across the focus groups, the students shared similar difficulties with finding relevant results in the discovery layer, the local catalog, and some subject-specialized databases. This finding, that upper-level performing arts students struggle to locate relevant sources using a variety of library-provided resources, matches the evidence that freshman students have challenges locating information.¹² Instruction on search strategies for the arts in all of these types of resources is greatly needed on a deeper level. Students gravitate toward the discovery layer due to the simple and prominent search box, but the students saw it as the most problematic for finding results. Online tutorials on using disciplinary search terms and limiters, focusing on how to best use the discovery layer, the catalog, and some of the subject-specific databases, seem to be clearly needed as a supplement to face-to-face instruction in these areas.

Most of the participants shared that they start their research using *Wikipedia*, YouTube, and Google, then use library resources as their searching narrows. Although many students use these sources, many also expressed some level of sheepishness or guilt

that they frequently employ these resources. It is important to teach students how to best utilize these types of sources for their performing arts work, and also to compare the advantages and disadvantages of such sources to those of library resources. It is also important to remove the stigma of using such sources. There are various examples of teaching using *Wikipedia* and other popular Web sources in the *Library Instruction Cookbook*, and librarians could add examples relevant to the discipline to those exercises.¹³ In addition to online instruction sessions, online guides can provide information about how to best leverage features of *Wikipedia*, Google, and YouTube for arts research.

Finally, several students identified themselves as visual learners. Many discussed locating physical materials through serendipity and physically browsing the stacks. Strategies to serve visual orientations and browsing behaviors include incorporating visual maps with subject icons of the stacks, including images in tutorials and online guides, and incorporating visuals in instruction sessions. All of the focus groups mentioned online flashcards as effective study tools. Incorporating online flashcards to teach IL concepts is worth exploring as a supplemental learning tool.

It was unanimous across the groups that performing arts students are busy. Between rehearsals, practicing, and classes, the students have little free time during the day and early evening, and conduct most of their research at night. The feedback indicates that library services such as reference chat should be offered later in the evenings. Many students mentioned the difficulty of physically getting to the library due to the distance across campus and time constraints. Courier services to the performing arts building (folded into existing library courier services on campus) could be a solution to help expedite access to print materials for these students.

Most of the participants shared that they start their research using *Wikipedia*, YouTube, and Google, then use library resources as their searching narrows.

The Bigger Picture: Credit-Bearing Instruction, Partnerships, and Marketing

Based on the focus group findings, there are larger implications and philosophical shifts to consider in library services to performing arts students, as well as upper-level disciplinary students as a whole. The following “big-picture” issues are those that the author sees as the most pressing based on the data gathered.

The performing arts students who participated in this case study identified a variety of needs or problems regarding information literacy, including how to locate relevant sources in a variety of formats, developing critical evaluation skills of sources, and gaining a critical understanding of their research topic. Across the focus groups, students indicated a need for information literacy skills for the practical applications, repeatedly invoking sources to help them do their jobs better in the performing arts field, whether it be better costume or set design, or better dance or musical techniques. Another need every group articulated was having access to professional research resources post-graduation. They all inquired in the focus groups about whether they will have access to library resources after they graduate.

The feedback supplied by the focus groups indicates that the students have complex research needs that are not likely to be met in a one-time information literacy instruction session or with a tutorial or guide. Although well-timed individual class sessions and relevant information literacy tutorials and guides are valid services (as confirmed by focus group comments) that will continue to have a role in supporting the curriculum, the students' input made it clear that those alone are not enough for their complicated and varied research needs. The evidence provides a strong argument for subject librarians to

The evidence provides a strong argument for subject librarians to develop and teach credit-bearing, upper-division and graduate information literacy classes in subject disciplines.

develop and teach credit-bearing, upper-division and graduate information literacy classes in subject disciplines.

The multifaceted needs shared by the participants underscore the ACRL recommendation that an advanced instruction program should include "research methods courses in disciplinary majors."¹⁴ The library literature features several examples of the efficacy of IL credit courses. One published study shows the impact of face-to-face information literacy courses using cumulative assessments.¹⁵ Another study indicates that

online credit-bearing information literacy courses are also impactful as shown by the significant improvements between pretest and posttest scores.¹⁶ For several examples of approaches to disciplinary information literacy credit courses, see Christopher Hollister's *Best Practices for Credit-Bearing Information Literacy Courses*.¹⁷

Credit classes could help ensure that librarians educate students on complex issues that go well beyond needed search strategies and into the realms of analytical thinking, engagement with sources, scholarly communications, and finding their scholarly and performer's voice in their discipline and future profession. One possible strategy to meet those demands is to incorporate problem-based learning activities into a credit-bearing course. Samantha Hines and Eric Hines detail one approach to problem-based learning techniques in their 2012 article.¹⁸

Instructors of upper-division or graduate level IL credit courses would have the opportunity to incorporate professional literacy issues, such as the business side of performing arts. Credit classes could also address the many needs identified by transfer students—the ones who participated in this study clearly fell through the cracks—who never received instruction and needed more in-depth subject information than our freshman-level tutorial provides.

In addition to continuing to offer upper-level individual instruction sessions, consultations, and learning tools, the author of this article has recently developed a graduate-level music research methods course. The course will be taught in spring 2015 to address identified needs in-depth, as well as to support departmental curriculum.

Generally speaking, individual instruction sessions, especially for the freshman and sophomore levels, could in large part be automated, or could be delegated to trained student peer library instructors. Such measures would provide time for the librarians to create and teach semester-long classes and in-depth workshops, and to develop tutorials, guides, and other learning tools. There is evidence that peer-to-peer library instruction,

while not widely implemented, can be an effective approach to IL instruction at the lower class levels.¹⁹ During the focus group interviews, students obviously took note of what their peers shared about their library experiences.

Another issue that became apparent in the focus group conversations was the need for increased partnerships between academic librarians and various groups, including disciplinary faculty, library colleagues in other departments, and

vendors. The discussions made clear that some faculty members continue to prescribe a required list of sources, which some students perceptively recognized as a limitation that did not allow for a more organic and effective research process. Students also acknowledged that the timing of instruction sessions is crucial, something that not all faculty members recognize. The range of the level of faculty involvement in information literacy instruction was apparent in the student comments. Some faculty were completely hands-off, while others provided all the source material to students, which surprised the author. Although it is expected that faculty direct their students to relevant sources and provide some information literacy instruction and guidance, supplying the entire class with the same list of journal articles and books to use for research seems questionable. To address these issues, librarians should be proactive about creating ongoing conversations with faculty. They should inform faculty of their expertise in regard to information literacy curriculum mapping, assignment design, and more.

Public services librarians should partner more with other librarians, especially those in technical services, to work together toward making resources more accessible in our catalogs. For example, the students indicated that various music formats and plays with defined characteristics (such as cast number and gender) were especially difficult to find. Utilizing cataloger expertise to determine how to make these items more accessible would greatly benefit the students.

When examining focus group data, it is important to analyze not only what participants shared but also what was not stated. Noticeably absent were comments regarding concepts related to scholarly communication: open access and information publishing cycles. Only one focus group briefly acknowledged copyright as a barrier to accessing online sources. Did students not mention these areas because they do not have perceived needs in these areas, or simply because the students are not aware of how these concepts might affect them? Further investigation of the needs of upper-division students in these areas is advisable, as is partnering with colleagues in scholarly communications to reach students on these issues of growing importance.

Librarians also need to partner more with campus information technology. One focus group identified the need for video editing software, but that the campus support for such software was minimal to nonexistent. Librarians and information technology staff should discuss how to best serve the technology needs of upper-level students who often must create projects and portfolios. Students are increasingly becoming multimedia content creators as much as consumers.²⁰ Having a librarian provide research assistance in computer labs beyond the library building may be worth investigating.

During the focus group interviews, students obviously took note of what their peers shared about their library experiences.

Vendors are another important group with whom to work. The difficulty of finding materials and legitimate complaints about how much less user-friendly the library databases are than some commercial websites (that is, Amazon, iTunes, and Netflix) in terms

Librarians and information technology staff should discuss how to best serve the technology needs of upper-level students who often must create projects and portfolios.

of searching and locating multimedia materials indicate the need for more librarian input to vendors regarding what constitutes effective library database interfaces. The feedback confirmed suspicions that librarians have had regarding the problems of discovery layers.²¹ Instruction alone will not improve the databases we offer, and if they do not improve, students will increasingly bypass our resources. Enhanced partnerships with vendors could greatly assist in decreasing the library disconnects students face and could help meet their information needs in a more meaningful way.

Although many librarians and staff spend much time and effort on marketing initiatives, focus group feedback indicated that more marketing of library services is greatly needed. Many of the students equated the library with print books and time-consuming research methods, and did not always make the connection that libraries offer many of the online sources that they regularly use. There is continual need for marketing of services

Many focus group participants requested more places to engage with the chat reference service, a service they value.

in new and creative ways, and not just relying on social media. Creative suggestions from the groups included sharing librarian information via the call-board within the department and sharing information through the department heads' e-mail or through the department office manager, since they have frequent contact with students. Many focus group participants requested more places to engage with the chat reference service, a service they value. There is a specific need for increased placement (in course shells, department websites, and social media) and marketing of chat and other library services targeted to upper-level disciplinary students.

with students. Many focus group participants

Conclusion

This case study provided valuable input and common concerns among students in performing arts disciplines that are usually studied individually in library research. Focus group interviews expedite stakeholder input, help make connections with participating students, are educational to all involved, are useful for developing new approaches, and can help strengthen arguments for changes and improvements to services. Focus groups, as Brian Mathews notes, are "rooted in empathy." He adds, "By seeking to understand what people are trying to accomplish we become better positioned to help them succeed."²² Themes that crossed all three focus groups included difficulties locating materials via the discovery layer and catalog, demand for quality media materials, and a need

for both interdisciplinary and primary research strategies and sources. Although some of the shared findings across groups were not necessarily surprising, it is important to hear directly from the students rather than to assume their disciplinary research needs or to rely on anecdotal evidence.

Focus group research does have limitations by its qualitative nature, mainly due to the limited population studied. Future related research could expand this study to use quantitative methods to obtain a larger pool of data.

Resulting action items from the collected data focus on information literacy instruction and related public services, but the input gathered also has implications for other library services worthy of further research. It could be fruitful for academic librarians to conduct focus group interviews with upper-division, disciplinary students regarding library collections needs, technology requirements, accessibility issues related to the cataloging of materials, and usability studies of subject databases.

At a fall 2012 meeting of the Association of Research Libraries, John Seely Brown warned about “competency traps” and to “avoid doing what you already know how to do.”²³ This research project was invaluable to reexamine and evolve more effective approaches to disciplinary instruction and research services. It is critical for academic librarians to reach out to their stakeholders, to hold honest conversations, and to hear students’ voices in order to make data-driven changes and the advances needed to remain relevant in the university and library educational missions.

Jennifer Mayer is an associate librarian and subject liaison for visual and performing arts and gender and women’s studies in the Department of Research and Instruction at the University of Wyoming Libraries in Laramie. She maybe reached by e-mail at: mayerj@uwyo.edu.

Appendix

1. Think about a course in which you learned a lot. What helped you learn, why did you learn so much?
2. How do you prepare for a performing arts-related project about which you know very little, be it background (contextual) information, technical information, or other?
3. What are some examples of assignments you have in your performing arts classes that required research or information gathering?
4. How do you approach the research/information gathering process in the performing arts? What are your steps, and what are your “go-to” resources?
5. What tools and services from the University of Wyoming Libraries would be helpful in terms of your performing arts research and information needs? Why?
6. What frustrations or barriers do you find with library research/the research process related to performing arts?
7. What do you value most about library services as a performing arts student? What role does the library play in your life as a student?
8. When learning, do you prefer online tutorials, online games, face-to-face instruction and consults, other? What would help meet your performing arts research needs the most?

9. Have you had library instruction related to performing arts? What helped, what was missing or not as helpful?
10. How do you see the library as fitting into your course of studies or not at the University of Wyoming?
11. How do you define research in the performing arts, and how have you engaged in it?
12. Any final thoughts, comments.

Notes

1. "2012 Top Ten Trends in Academic Libraries: A Review of the Trends and Issues Affecting Academic Libraries in Higher Education," Association of College and Research Libraries (ACRL), accessed May 27, 2014, <http://crln.acrl.org/content/73/6/311.full>.
2. Brian Mathews, "The Art of Problem Discovery: Adaptive Thinking for Innovation and Growth" (paper presented at the ACRL Conference, Indianapolis, IN, April 10–13, 2013).
3. Melissa Bowles-Terry, "Library Instruction and Academic Success: A Mixed-Methods Assessment of a Library Instruction Program," *Evidence Based Library and Information Practice* 7,1 (2012): 82–95.
4. Ann Medaille, "Creativity and Craft: The Information-Seeking Behavior of Theatre Artists," *Journal of Documentation* 66, 3 (2010): 327–47, doi:10.1108/00220411011038430.
5. Michael Olsson, "All the World's a Stage: The Information Practices and Sense-Making of Theatre Professionals," *Libri* 60, 3 (2010): 241–52, doi:10.1515/libr.2010.021.
6. Chern Li Liew and Siong Ngor Ng, "Beyond the Notes: A Qualitative Study of the Information-Seeking Behavior of Ethnomusicologists," *Journal of Academic Librarianship* 32, 1 (2006): 60–68, doi:10.1016/j.acadlib.2005.10.003.
7. Joe C. Clark, "Format Preferences of Performing Arts Students," *Journal of Academic Librarianship* 39, 3 (2013): 297–307, doi:<http://dx.doi.org/10.1016/j.acadlib.2013.02.005>.
8. Kirstin Dougan, "Information Seeking Behaviors of Music Students," *Reference Services Review* 40, 4 (2012): 558–73, doi:10.1108/00907321211277369.
9. Joseph R. Matson and Anne Shelly, "In Search of Music: A Study of Music Consumption and Search Behaviors in Undergraduate Students," *Music Reference Services Quarterly* 16, 4 (2013): 218–31, doi: 10.1080/10588167.2013.843368.
10. Priscilla Atkins, "Information Literacy and the Arts: Be There—Or Miss It!" *College & Research Libraries News* 62, 11 (2001): 1086–92.
11. Hannah Bennett, "Bringing the Studio into the Library: Addressing the Research Needs of Studio Art and Architecture Students," *Art Documentation* 25, 1 (2006): 38–42.
12. Alison J. Head, "Project Information Literacy Research Report: Learning the Ropes: How Freshmen Conduct Course Research Once They Enter College," accessed November 11, 2014, http://projectinfoit.org/images/pdfs/pil_2013_freshmenstudy_fullreport.pdf.
13. Doug Cook and Ryan Sittler, *Library Instruction Cookbook* (Chicago: ACRL, 2009).
14. "Guidelines for Instruction Programs in Academic Libraries," ACRL, accessed November 7, 2014, <http://www.ala.org/acrl/standards/guidelinesinstruction>.
15. Jennifer Mayer and Melissa Bowles-Terry, "Engagement and Assessment in a Credit-Bearing Information Literacy Course," *Reference Services Review* 41, 1 (2013): 62–79, doi:10.1108/00907321311300884.
16. Yvonne Mery, Jill Newby, and Ke Peng, "Why One-Shot Information Literacy Sessions Are Not the Future of Instruction: A Case for Online Credit Courses," *College & Research Libraries* 73, 4 (2012): 366–77, doi:10.5860/crl-271.
17. Christopher V. Hollister, *Best Practices for Credit-Bearing Information Literacy Courses* (Chicago: ACRL, 2010).
18. Samantha Schmehl Hines and Eric Hines, "Faculty and Librarian Collaboration on Problem-Based Learning," *Journal of Library Innovation* 3, 2 (2012): 18–32.

19. Brett B. Bodemer, "They CAN and They SHOULD: Undergraduates Providing Peer Reference and Instruction," *College & Research Libraries* 75, 2 (2014): 162–78, doi:10.5860/crl12-411.
20. Joan K. Lippincott, "Student Content Creators: Convergence of Literacies," *EDUCAUSE Review* 42, 6 (November/December 2007): 16.
21. Marc Parry, "As Researchers Turn to Google, Libraries Navigate the Messy World of Discovery Tools," *Chronicle of Higher Education*, April 21, 2014.
22. Mathews, "The Art of Problem Discovery."
23. John Seely Brown, "Changing How We Think about and Lead Change: 20th C. Push Economy→21st C. Pull Economy" (lecture, Association of Research Libraries Fall Forum, Arlington, VA, October 12, 2012).