Authors

Michael Stephens, David Wedaman, Ellen Freeman, Alison Hicks, Gail Matthews-De Natale, Lisa Spiro, and Diane Wahl

Academic 15: Evaluating library and IT staff responses to disruption and change in higher education

by Michael Stephens, David Wedaman, Ellen Freeman, Alison Hicks, Gail Matthews-DeNatale, Diane Wahl, and Lisa Spiro

Abstract

Academic 15 (A15), an interview-based research project, explores the perceptions of university library and information technology (IT) staff related to the challenges impacting higher education as a result of technological advances. Faced with disruption on many fronts, academic library and IT staff have adapted and adopted a number of tools and processes to cope with accelerating change. This includes seeking out collaborative partnerships, working within financial constraints, discovering alternate funding sources, and experimenting with new roles in the evolving model of higher education. This paper presents findings to guide the future design and implementation of resilient support systems for library, educational technology, and IT staff.

Contents

[Introduction](#)

[Literature review](#)

[Academic 15 overview](#)

[Methodology](#)

[Findings and discussion](#)

[Synthesis](#)

[Longitudinal comparison](#)

[Future of A15](#)

[Conclusion](#)

Introduction

Disruptive technologies have the potential to create positive changes within higher education, particularly in the evolution of support services. Christensen and Eyring (2011) noted that models for academic operations and program delivery are ripe for disruption. Bass (2012) proposed that learning itself is in a state of disruption. Selingo (2013) proclaimed that disruptive forces have changed higher education forever. However, the body of literature that looks at the impact of disruption in higher education tends to overlook the perspective of staff that works in these settings. Library, educational technology, and information technology (IT) staff offer a unique perspective on the changes that result from ongoing disruptions, which is key to any discussion of higher education.

The Academic 15 (A15) study was designed to document the perspectives of these people who work in close, day-to-day support relationships with faculty, academic administrators, and students. While complementing the Johnson, *et al.* (2012) NMC Horizon Report, the National Survey of Student Engagement (NSSE, 2014), the Faculty Survey of Student Engagement (FSSE, 2014), LibQual+ (2014), MISO (2010), and the ECAR Study (Dahlstrom, *et al.*, 2013), the A15 is smaller in scope than these national surveys. Instead, it uses an ethnographic approach to ask open-ended questions and pose follow-up queries that would not be logistically feasible in large-scale research.

In this way, the A15 study provides higher education professionals with the information to make intelligent, and potentially visionary decisions about structural, staffing, and professional development

strategies within their institutions. By reporting on patterns of change within academic institutions' support relationships, this paper aims to help configure effective support systems that are responsive to disruptive pressures rather than undermined by them.

Literature review

Surveys

In higher education, analysis is big business. Decision-makers commission and engage in visioning exercises and surveys to understand the current and emerging state of the education environment. "The Future of Higher Education: Beyond the Campus" is an example of one such survey (EDUCAUSE, 2010). The product of a collaborative visioning exercise by groups in Australia, the U.K., the U.S. and the Netherlands, it focuses on changes observed within the higher education environment as well as future patterns that could be used to drive strategic planning.

In the EDUCAUSE report, both expected and surprising themes emerge. One predictable theme is the pressure that expanding global markets and decreasing financial support for institutions are placing on higher education. Other themes are more surprising, including the strong focus that the report places on moving beyond the campus as a physical place, in terms of resources, networks, and the student's frame of reference. While the report provides a unique overview of a global situation, some references may not be familiar or applicable to the U.S. situation. Furthermore, the report takes an administrative level approach, barely mentioning the role of support staff such as the educational technologist or librarian.

"The Future Impact of The Internet on Higher Education" survey discusses themes similar to the EDUCAUSE report (Anderson, *et al.*, 2012). Conducted by the Pew Research Center Internet & American Life Project and the Elon University Imagining the Internet Center, online questionnaires were sent to selected Internet experts, researchers, observers, and users. Drawing on more than 1,000 responses, the report provides a snapshot of recent change within higher education and a vision of what 2020 will bring. Like the EDUCAUSE (2010) report, respondents believed that economic realities would change higher education, due to tight budgets forcing technological innovation.

The development of online instructional delivery was seen as equally important for many respondents. However, this was not at the expense of the physical campus, with many respondents noting that locatedness may have value for the learning experience. While the report is more visionary than specific, specific challenges that were noted included resistance to change among faculty. The need to allow for coexisting and different pedagogy and teaching methods was also seen as important.

The Measuring Information Services Outcomes (MISO) Survey and LibQUAL+ are two additional surveys that examine change in academic libraries and IT services. MISO is a Web-based quantitative survey that captures data on services, user skills, and technologies (MISO, 2010). LibQUAL+ (2014) provides similar information for libraries looking to solicit user feedback on specific services and user needs. While both MISO and LibQUAL+ have helped individual libraries review their services, most aggregated information is only available to participating institutions.

These surveys provide interesting counterparts to the A15 study. However, by presenting and analyzing the perspectives and day-to-day experiences of library and IT professionals, A15 adds unique elements to the discussion.

Disruption

The Christensen theory of disruptive innovation and the concepts of the innovative university offer a lens through which to view changes reported in the surveys. Christensen (2000) describes two types of innovation: sustaining innovations and disruptive innovations. Sustaining innovations are evolutionary, improvements-based changes such as faster computers or longer lasting batteries. Disruptive innovation, titled "disruptive technology" by Christensen, is "technologically straightforward, consisting of off-the-shelf components put together in a product architecture that was often simpler than prior approaches" [1].

Christensen and Eyring (2011), whose original work focused on the business environment, noted that new waves of growth come from disruptive innovations that make products simpler and more affordable for new groups of people. For example, although far less powerful and complex than a mainframe, the personal computer (PC) fundamentally changed the market because they were relatively affordable and easy to use. After gaining market share through a process of disruptive innovation, the makers of PCs could then draw on their resources to make improvements.

In an interview by Euchner (2011), Christensen discusses the application of the theory of disruptive innovation in many other contexts, including higher education. In *The Innovative University, Changing the*

DNA of Higher Education from the Inside Out, Christensen and Eyring [2] argue that “the traditional university is still indispensable,” but “mastering the challenges and opportunities presented by a fast-paced global society requires more than just basic technical skill and cognitive competence.” As such, and from a process instead of a product point of view, it could be argued that Learning 2.0 (L2.0), participatory teaching, bring your own device (BYOD), and MOOCs are disruptive innovations. While many argue that institutions of higher education are ripe for change, Christensen and Eyring [3] maintain the “university’s innovations must be informed by self-awareness and an understanding of history.”

This must also include an understanding of practical realities. The results of the A15 study reveal that successful innovations in higher education support systems involve the navigation of four challenges:

- Coping with change
- Increasing collaboration
- Financial constraints
- The evolving role of the library

Academic 15 overview

During fall 2011 and spring 2012, 11 researchers conducted hour-long interviews with 55 higher education professionals who work in libraries, information technology units, and teaching and learning centers across the United States. Interviewees included staff employed at different levels in a mix of private and public universities and colleges. The interviews focused on three key research questions. These were designed to assess the evolving learning environment and the implications of disruption for support infrastructures in higher education:

- What recent changes or new trends do you see in teaching, learning, and/or research on your campus?
- What challenges do you see arising in your ongoing operations as a result of these trends or changes?
- How are you responding, planning to respond, or hoping to respond to these challenges?

Pilot study

Phase one

The initial pilot study that developed into the A15 was launched in 2010. The original researchers met at the 2010 EDUCAUSE Learning Initiative Annual Meeting and discussed the absence of any research vehicle that gathered the perspective of the staff directly supporting teaching, learning, and research activities in higher education. They noted that these categories of staff would have a view of the learning environment that was potentially valuable and informative. Their work with a variety of students and faculty across disciplines meant that their view would be holistic. It would also provide a unique perspective that discipline-focused individuals may not have. Due to the nature of their positions, staff both understands the pedagogical challenges of the learning context as well as the costs, resource needs, and logistical requirements associated with learning environments. After the discussion, a proof of concept pilot study was launched in late 2010.

Interviewees included 24 library and IT staff serving in positions that directly supported educators, learners, and researchers. The first phase of the study gathered perspectives on curricular changes and the ability of library and IT staff to deal with the changes. The pilot study is on file with the Dominican University Institutional Review Board as “Perceived Changes in the Context of Teaching, Research, and Scholarship.” A poster was presented at the 2011 EDUCAUSE Learning Initiatives Conference.

Phase two

The second phase of the pilot study, initiated in Fall 2011 and reported in this paper, expanded the scope and collection of data. The continuing intent is to conduct research on an annual basis and track the trends that will eventually alter the landscape of higher education and, perhaps, the very definition of the library and IT profession.

Methodology

The A15 study is conducted in three sections each year: recruitment and interviewing, data coding, and data analysis. Ethnographic methodologies are used to analyze interview results, distilling the findings into a list of 15 major trends. The A15 study research protocol is on file with the Institutional Review Board of

Brandeis University.

Recruitment in 2011–12 took place through calls for participation in library, educational technology, and IT e-mail distribution lists. Interviews of respondents were carried out primarily by phone between December 2011 and January 2012. Coding of interview data took place in February and March of 2012. Data analysis was completed in May 2012.

The 55 interviews generated hundreds of pages of text that were coded and sorted, and 1,147 distinct and striking ideas emerged, which were then sorted into 61 categories. The coding included a three-step process: an initial pass through randomly selected interviews to discern possible codes, the development of a codebook via practice coding by the principal investigators, and a final full pass through all of the collected interviews using the established codebook. Meetings and discussions about the content analysis were held throughout this phase via teleconference.

Ideas were analyzed from several perspectives: the particular question that elicited the response, the staff roles of the respondent, and the positions of the ideas within larger themes.

Findings and discussion

The analysis yielded a set of five areas of interest for each of the three research questions about institutional changes, challenges, and responses. These 15 “thematic statements” comprise the Academic 15 for this study. In addition, the data was explored more deeply by examining the responses by job category and level within the respondents’ institutions.

Changes or trends

Research Question One: What recent changes or new trends do you see in teaching, learning, and/or research on your campus?

Responses to the first question reveal five areas of interest: a shift toward learner-centered pedagogy, curricular reforms, the growth of online and blended education, the evolution of the learning management system (LMS) and other educational technologies, and transformations in research practices as a result of digital resources.

Shift towards learner-centered pedagogy

In describing changes to pedagogy, our respondents frequently mention increasing interest in flipped classes, blended learning, collaborative projects, interdisciplinary courses, and active learning. These shifts may be driven by an “increased awareness of general ‘progressive’ pedagogy” and a greater interest in “research-based” teaching methods. However, one respondent notes this interest occurs in “isolated pockets” rather than across campus. As an indicator of growing interest in new approaches to teaching, one college reports that it received more than 200 letters of inquiry for a “grant for innovative pedagogy.” Respondents state that learning is becoming more situated, experiential, and community-based, which forces teachers to be creative.

Although some faculty still lectures, others are focusing on interactive, problem-based learning. This backs up the Anderson, *et al.* (2012) Pew Research Center report findings about the co-existence of different teaching models. Flipped classes seem to be catching on, as several respondents mention this trend or the use of asynchronous online lectures. Technology in the classroom is going beyond the use of presentation tools and is now used for engaging students and supporting active learning. For example, classes use mobile devices to share students’ thoughts, increase interactivity, and inspire classroom conversations.

In addition, many instructors require students to collaborate on projects and participate in peer learning. One interviewee reported, “Students expect to collaborate — with IT, with librarians, with peers on assignments. It is no longer an initiative on campus, but a part of the culture.” Campuses also see the increasing use of collaborative technologies such as blogs, wikis, and Web-based authoring software (*e.g.*, GoogleDocs). Some institutions use presentation and webinar software to broadcast guest experts and enable alumni and other visitors to participate in classes. Faculty members are not only incorporating more interactive and collaborative approaches into their teaching, but are also adding digital media to their courses and asking students to submit assignments in multimedia formats.

With the goal of embracing emerging pedagogies, colleges and universities are enhancing facilities and systems of support. As one interviewee observed, “Many colleges and universities are finally at the point where they are putting in chairs that move and rooms for students that include AV equipment.” The aim is to offer more flexible, interactive learning environments, although such facilities can quickly become obsolete. Group assignments and research will need to be supported by new collaborative spaces on

campus, often in the library. To support information literacy and learning, some librarians are embedding themselves into courses, perhaps reflecting a greater willingness among instructors to collaborate.

Curricular reforms

Respondents point to ongoing initiatives to change the curriculum, particularly by revamping general education courses and promoting interdisciplinary approaches. At some institutions, students' desire for career preparation and an ongoing recession may be driving curricular changes, including the creation of new programs such as health, community, and disaster informatics. In a broader sense, many colleges and universities seem to believe that being educated in the twenty-first century requires the ability to think across disciplines, adopt global perspectives, communicate clearly in different media, and understand and represent quantitative information.

One college restructured the general education curriculum, aiming "to get faculty to tie their teaching to the real world." Another institution is launching new, interdisciplinary initiatives focused on quantitative reasoning across the curriculum, creativity, and visual culture. A number of institutions are embracing interdisciplinary approaches to knowledge formation, focusing on pressing issues such as sustainability: "I see faculty are incorporating this larger concept of, not isolated knowledge but, how different fields are connected." As one interviewee observed, her college has spent a long time talking about interdisciplinary innovations, but now it finally "seems to be happening," particularly as newer faculty members join departments. Some institutions are seeing a growth in global learning and student research opportunities.

Curricular transformation can both spark new pedagogical approaches and open up new opportunities for library and IT groups to provide support. After one university updated its general education curriculum, faculty showed a greater willingness to engage students with new approaches and technologies. Another interviewee reported that the new general curriculum emphasizes "innovative pedagogy." This is raising awareness of how people learn as well as interest among some faculty in using mobile technologies for teaching. Libraries, information services, and teaching and learning centers are attempting to participate in and support the process of curricular redesign. For example, one library and information services group is talking with faculty about integrating information fluency into curriculum.

Accompanying the drive for curricular change are ongoing assessment efforts "to demonstrate what we say we do." These are seen as particularly important within the context of accreditation and demonstrating the worth of a liberal arts education. Assessment also underlies more focused course redesign efforts. However, designing effective assessments is a challenge, particularly with online learning. At one institution, a few professors are experimenting with post-class assessment, using clickers or brief surveys to see what students wanted to learn and what they actually learned.

Growth of online and blended education

Interviewees represent a range of institutions: entirely online, offering a number of online or hybrid programs, beginning to experiment with online and hybrid programs, or having no significant number of online programs. Many undergraduate online degree programs exist, but online education seems to be more prevalent for graduate and continuing education. At one institution, about 75 percent of graduate and continuing education are hybrid or online, whereas only about 10 to 20 percent of undergraduate courses are currently online because of "contractual obligations." This ties in with the 2010 EDUCAUSE Learning Initiative survey findings that higher education is starting to move beyond the physical campus. In addition, the fact that some universities are expanding to multiple campuses may be influencing plans to offer more online learning.

There is also a growing sense that universities and colleges that ignore online learning may be left behind. Two interviewees used the phrase "late to the game" to describe their institutions' emerging engagement with online learning. One of the schools is focusing its online courses on professional education, while the other is primarily exploring online education through blended courses.

After taking a Massive Open Online Course (MOOC) with colleagues through Stanford University, one interviewee wondered whether online learning, overseen by a professor, might offer an alternative to the "adjunct-taught rote large class." The open education movement represented by MOOCs and open educational resources (OER) is attracting greater interest. Nevertheless, there still seems to be some stigma attached to online learning. One interviewee suggested that his or her institution's online programs aimed to differentiate themselves from larger online programs by exploring how to ensure quality, keep classes small, and maintain "high-touch" pedagogy.

The shift to online education necessitates new approaches to pedagogy and support for both students and faculty. With the "explosion of online learning" comes a "re-evaluation of learning goals" and a need to "document the learning that is happening" in order to meet accreditation standards. One institution has moved from an ad hoc approach to a "more structured approach to course design," adopting the University of Maryland's Quality Matters. At one online institution that grants two- and four-year undergraduate degrees, faculty development, student services and support occur online. One graduate school currently offers its programs almost entirely online, except for a few courses that demand specific

specialized software or lab activities. This school takes an asynchronous, text-based approach to teaching, although it does provide support to faculty in developing short multimedia segments to illustrate complex techniques. In supporting online learning, support professionals must determine how to provide services to students accessing courseware from remote locations. One university is exploring tools to verify student identities when administering online tests.

Evolution of LMS and other educational technologies

The technologies that higher education uses to support learning are changing, particularly the Learning Management System (LMS). Several respondents noted the "constant change in CMS," as many colleges switch to different systems. Colleges are consolidating multiple campuses, using new Learning/Course Management Systems (LCMS), and moving from proprietary to open systems such as Moodle and Sakai. Migrating from one system to another is a significant project that requires "making sure you don't lose the current users but leverage this opportunity as a way to get some new interest."

For some institutions, changing the LMS sparks new explorations of pedagogy. Instructional technologists encourage faculty to use the LMS "more as an interactive forum" rather than just as a file repository. Campus librarians are embracing opportunities to act as "helpful partners" when a new system is adopted. They provide training and embed links to subject guides. At one campus, "students are annoyed" if faculty do not use the LMS, since students appreciate being able to access coursework at any time. Notwithstanding, some faculty still refuses to use these technologies.

Attention is also turning to the "evolution of the LMS," as people discuss whether "the LMS [is] going to be all-encompassing or something you can plug things into?" To extend the capabilities of the LMS, one institution is integrating "learning tools," such as e-textbooks, learning analytics, e-portfolios, and blogs. For others, the LMS is no longer useful as educators move beyond the "walled garden" to open platforms. According to one respondent, interest is growing in using Web 2.0 platforms such as WordPress instead of the LMS. Another respondent pointed to "more emphasis on collective/peer-to-peer learning as faculty move away from the LMS."

Other technologies are also catching on, particularly to increase interaction and support assessment. Many institutions are implementing portfolio systems to document student learning. Respondents also noted using video conferencing to improve interaction for students and teachers.

Transformations in research practices

Interviewees pointed to several emerging trends in research, including increased reliance on digital resources, more student research (often in collaboration with faculty), and the growth of interdisciplinary research. The "explosion" of search engines and electronic journals has "shortened the time to do research". The growth of inter-library loans, as well as institutional digitization projects have expanded access to research materials. What once required a research trip can now often be accomplished online. In terms of e-books, faculty and students show growing interest, but there remains confusion about formats and devices. For one interviewee these problems mean that many students still prefer to read print rather than e-books. This is particularly the case when it comes to older, less user-friendly e-book platforms.

Some campuses are seeing a growing interest in digital scholarship and digital humanities. Greater availability of collections of digital resources means there are new possibilities for research. This includes comparing versions of a text or tracing influences that major works have had on less well-known works. The question, which according to one respondent is a "big fun" one, is "what kind of teaching and research work do they enable?" At the same time, speed and abundance present challenges. Students may be overwhelmed with information and have difficulty processing and evaluating it. One interviewee pointed to "the need for students to actually spend time looking at secondary and tertiary sources to get context and spend that time to contextualize what you've found."

Research projects seem to be an increasingly important part of the undergraduate curriculum. For instance, at one liberal arts college, science students are co-authoring articles with faculty. Not only has student research become more significant to undergraduate education, but it also seems to be getting more "sophisticated and the research topic or problem is highly specialized, instead of general." Academic leaders also emphasize interdisciplinary collaboration in research as well as graduate and undergraduate courses. Interdisciplinary research has led some faculty to construct "social networks across campus for that purpose." Indeed, the Internet makes it easier for researchers to find, connect with, and collaborate with each other.

The growth of undergraduate research challenges library professionals, IT groups, and student services. At some colleges and universities, the increased emphasis on undergraduate research has not necessarily been accompanied by a greater push for training in conducting library research, and student preparation "could be disparate." Yet at other institutions, librarians have become more involved in supporting undergraduate research, particularly in "non-science" disciplines where students typically generate their own research topics.

Organizational needs or challenges

Research Question Two: What challenges do you see arising in your ongoing operations as a result of these trends or changes?

Data generated in response to the second question in our interviews reveals five areas of interest: resource constraints, collaboration constraints, rethinking working models, dealing with rapid technological change, and dealing with organizational change.

Resource constraints

Resource constraints proved to be the major challenge for survey respondents, something that was not completely unexpected in the climate of national and local cuts to education. Interviewees overwhelmingly cited financial problems as the principal challenge, particularly due to budget cuts, higher costs for existing services, or the need for new services or renovations. This is similar to findings in both the 2010 EDUCAUSE Learning Initiative report and the Anderson, *et al.* (2012) Pew Research Center report. Shrinking or static budgets mean that groups or departments on campus are “constantly competing for enough money” even as they “do more for more people.” Groups are feeling the strain as they try to maintain and create services within these constraints without a corresponding budget increase.

Mentions of staffing constraints are almost equally common, both in terms of numbers required to support campus needs as well as in terms of a lack of necessary skills and training. Many respondents mentioned that staff are nearing burnout as departments struggle with increasing demands for their services and having “enough staff to respond to all the help people want.” Other interviewees mentioned the difficulties of retaining talented staff, as well as being unable to hire new staff with key or in-demand skill sets. Finally, time constraints were another preoccupation for interviewees. A lack of time is particularly noticeable among faculty who cited that “casual conversations [and] being immersed in the community” were seen as a drain within academia’s intense focus on awards, publications, and the “need to achieve”.

Collaboration constraints

Changing department roles and the need to collaborate between groups on campus provides another challenge. This is particularly the case when new teaching and learning needs require working with groups in different ways. Previously separate, library staff and IT departments are seeing their work overlap. Many interviewees remarked on difficulties collaborating, particularly when tasks don’t fall neatly in a particular group, clash with traditional stereotypes, or have unclear expectations. Librarians grumbled that “IT folks don’t see librarians as skilled” while “lines are getting very squishy as far as who helps faculty with pedagogical and intellectual pursuits.” Both groups complained that it is hard working with “people that do not have an understanding of technology” and agreed that departments need “to do a better job in communicating and working together [and] need a change in management and communication.” The clashing of cultures as well as differing visions and communication styles are underlying problems. Bridging these gaps, or “speaking the language of faculty” is key for many interviewees.

Rethinking working models

Changing teaching and learning expectations means that many interviewees are challenged with rethinking and creating a culture around new working or support models. Diversifying student populations means that respondents are tasked to support new groups, such as international students, and new classes, which are often more interdisciplinary. Faculty needs are also growing, which provides a challenge because of the “fragmented support landscape” split between IT, the library, and media departments. Furthermore, as faculty adopts new technology-rich teaching plans or classrooms, courses become “major productions” that need a fleet of support services — a further challenge for respondents.

At the same time, changing service expectations means that respondents often feel pulled in several directions, and feel they need to reset people’s expectations. Communicating “operational change” is a challenge, such as getting faculty to understand that “the library is not taking away a service but is making an existing service better.” Student expectations that “everything is online” are also problematic, as is the lack of authority inherent in many new support groups. Finally, the changing use of space on campus is also challenging. Many interviewees cited the need to adapt old buildings to new uses, such as group study and collaborative workspaces as well as new work habits, such as eating in the library. The need to accommodate “students’ varied needs throughout the week” is also seen in dorm redesigns and computer labs and includes demands to think about both academic and recreational technology needs.

Dealing with rapid technological change

Our respondents and their user communities are faced daily with adapting to the “treadmill” of rapid change in technologies, tools, and workflows. On the technology side, they find it difficult to: provide a unified user experience among a variety of mismatched systems and interfaces, support the complex variety of desktop, laptop, and mobile platforms, and determine the best product among a wide variety of changing options.

On the human side, respondents found it difficult to support a wide breadth of skill levels and comfort levels in adopting new technologies. They were also challenged to keep up-to-date, with some longing for a more healthy balance of “technology and human.” Respondents often noted a perceived reluctance in faculty to adopt new technologies, but also expressed concern that students aren’t always open to learning the skills they need to acquire to be successful. As one respondent noted, everyone — students, faculty, and support staff — can stand to improve in their use of technology, but that’s the “elephant in the room that people don’t talk about.”

Dealing with organizational change

Our respondents face a variety of challenges in workplace culture and community relations as organizations transform and adapt services, roles, and traditions and redeploy staff resources. Old ways of understanding are “shifting from ‘give-technology’ organizations to ‘services-based’ organizations ... learning organizations.” As one respondent commented, the “old way of doing things is an issue.” In terms of relationships with the community, some respondents suggested that organizational change requires a redefinition of service expectations and re-establishment of trust within new service models. It is a challenge to set those expectations while in the midst of change — to tell the user community what can be provided for them even as “we redefine what our services are.”

Strategic actions or responses

Research Question Three: How are you responding, planning to respond, or hoping to respond to these challenges?

Data generated in response to the third question in our interviews reveal five areas of interest: collaboration and community engagement, financial proactivity, organizational transformation, professional development, and strategy.

Collaboration and community engagement

Respondents reported an increase in new collaborations and a focus on the community of users that seeks to “more actively engage with faculty and students.” One common thread is increased collaboration between the library and IT, such as better integrating library systems with IT systems on campus. This also includes a push to engage communities outside the campus. In the IT department, one respondent noted that they were “making an effort to collaborate.” Librarians are seeking to be more involved in classrooms and have more contact with students. Some have formalized the process with a liaison program, while others are involving faculty in changes to reference and help services. One has created a community of digital innovators as part of outreach. Another respondent shared that a campus educational technology advisory committee had changed into a “learning community focused around pedagogy.” Another common theme was IT and library staff seeking ways to promote connections and visibility of systems across various departments. One respondent noted: “faculty don’t want to take time to find IT/library staff, will ask person next to them.” Solutions include enhanced liaison programs, presentations by IT and library personnel, and a focus on transparency and communication. One respondent noted: “Listening and paying attention, asking questions: I don’t think any of us can do enough of that.”

Financial proactivity

Our results show that our survey respondents are reacting to financial constraints in two ways. They are looking for ways to work more efficiently and to “do more with less.” They are also seeing funding as part of a strategic initiative. Instead of waiting for external conditions to affect them, or hoping for budget processes to work in their favor, respondents actively seek ways to grow and defend revenue streams. Reported actions include: aggressively pursuing grant funding, participating in capital campaigns, and using new kinds of metrics and analytics to build the case for funding services and staff. One respondent is developing new sources of funds for archival collections by increasing their use in direct instruction. Respondents make the case that library services are critical for institutions as they transform themselves in the digital age. “We’ve presented to the president and president’s council a ... capital project to revitalize our technology infrastructure. We’ve said ‘this is foundational — everything will be built on this. If we don’t take care of this infrastructure then our school isn’t going to be viable in the future it won’t be able to compete, because the services offered won’t be on a par with like institutions.’”

Organizational transformation

As one survey respondent stated, “re-visioning library facility and services offered in it,” includes a rethinking of the way things are done internally and re-imagining space and roles. “There is a directed effort to break down old IT/Library service ideas,” noted one respondent, while another aimed to “develop the library staff of the future” with an emphasis on project management skills and subject area expertise. Another respondent “wanted tech people who can listen.” Library spaces are being transformed as well. The library becomes a “salon” and a space for multiple groups to collaborate as collections go digital. Another respondent renamed a service point as a “research help desk.” Implementing new standards,

evaluating services, and focusing on adapting roles to meet user needs are all part of this response category. One respondent noted that they are “creating a learning organization academy” to help institutions change.

Professional development

Library and IT staff recognize the need to keep learning, especially technology based advancements. Respondents mainly discussed personal aspects of learning and development, with few mentions of organized institutional programs. Library and IT staff must “educate ourselves to be effective in new environments,” and “find and engage with professional development opportunities.” One respondent stated: “I’m working on my own professional development by continuing to develop technical skills and watching the job market.”

Strategy

Our respondents mention strategic planning as a key response to the changing environment. They see that being successful in a context of change means dedicating a significant amount of time to planning for the future even when this future might be a drastic departure from existing organizational structures and services. Our respondents mention strategic planning, “visioning” exercises, idea and curriculum development, and retreat activities around space, staffing, and services. One respondent called it “really looking at who we are, who we’ve been, and where we’re going.”

Analysis by job category and level

In order to further analyze the data, we used the job titles of respondents to sort by job category (the area in which they worked) and by job level (their relative position in the hierarchy of their workplace). Respondents were classified as working in the library, educational technology, or IT job categories, and as working on a staff, managerial, or senior administrator level. The following is a breakdown of the respondents by job category: 27 librarians (48 percent), 23 educational technologists (41 percent), and six information technologists (11 percent). The following is a breakdown of the respondents by level: 26 staff (46 percent), 26 managers (46 percent), and four senior administrators (seven percent).

In response to research question one, changes or trends, all job categories cited pedagogy most frequently as a change in their context. Educational technologists noted curricular change, or restructuring courses of study, departments, and programs. Librarians noted “research,” and information technologists, the LMS. Staff and managerial job levels also cited pedagogy most frequently as a key contextual change. For senior administrators, the most-cited environmental change is the LMS. Staff levels ranked the LMS second after pedagogy, and both managers and senior administrators ranked “curricular change” second. (See Figure 1 below.)

In response to research question two, organizational needs or challenges, educational technologists most frequently cited “staffing” as an organizational challenge followed by “support models” (or rethinking the ways they offer support). Librarians mentioned financial constraints most often and staffing second. IT staff cited an equal number of times the work involved in collaboration and the challenge of dealing with constantly emerging technology. Staff levels cited the stress of helping people adopt ever-changing technology, with changing “support models” the second most often. Managers mentioned financial constraints most often and staffing slightly less frequently. Senior administrators also cited financial constraints most often, with collaboration as the second most-cited challenge. See [Table 1](#).

Table 1: Number of mentions of challenges by job category/level.		
Educational technologist	Information technologist	Librarian
Staffing (11)	Collaboration (3)	Financial (21)
Support (10)	Emerging technology (3)	Staffing (16)
Staff	Administrator	Director
Technology adoption (25)	Financial (5)	Financial (17)
Support models (14)	Collaboration (3)	Staffing (16)

In response to research question three, strategic actions or responses, almost all categories and job levels mentioned collaboration as a key strategic response to their environment. Librarians mentioned

“community engagement” first and collaboration second. Community engagement was the second most-noted strategy by educational technologists and managers. Information technologists mentioned moving to the cloud with the second-most frequency. Those working at the staff level cited rethinking support models second. Senior administrators cited involvement in open education after collaboration.

Synthesis

Four key themes

Looking across all respondents and questions, we see four key themes emerging within the framework of disruption. These include coping with change, increasing collaboration, responding to financial constraints, and the evolving library.

Coping with change

Respondents are clearly coping with change on a variety of fronts — pedagogies, technologies, budgets, student and faculty populations, organizational models, and expectations. Dealing with change is one of the primary challenges respondents are thinking about.

Increasing collaboration

The frequency of the responses related to collaboration in different contexts is notable and includes: growth in collaborative learning, difficulties of collaborating across campus units, and the importance of collaboration as a strategy for engaging faculty and students. Respondents seem to intuitively understand that rigid organizational structures and roles will not help professionals to navigate in a changing world.

Responding to financial constraints

Respondents describe being caught in a double bind — having to deal with limited budgets during times of increasing demands for services. The need to re-conceptualize and implement new services is a resource-intensive and challenging task.

The evolving library

A final overarching theme in the reported survey responses is that of the continuing evolution of the library. Respondents deal with many changes in how libraries work or hope to work. Among the changes are embedded librarianship, new service models, more collaboration with faculty, growth of information literacy initiatives, collaborative spaces, and information commons.

MOOCs in the future

The investigators are surprised by the absence from the data of significant numbers of references to a recent groundswell in higher education — the large-scale online courses offered by Coursera, Udacity, and the MITx experiments. MOOCs will eventually directly impact the respondents in our surveys, and the investigators suspect that much of the news surrounding this new trend came after the interviews, or the significance of MOOCs has not yet percolated through all organizations.

Longitudinal comparison

A comparison of spring 2012 with the pilot fall 2011 results reveals interesting changes in respondents' thinking.

In response to research question one, pedagogical change was the primary environmental change noted by respondents in both the 2011 pilot study and the 2012 survey. The 2011 pilot study's second-ranked change related to the pressure of cloud-based and third-party services on service expectations, and that particular focus was not reported as one of the top five changes in the 2012 survey. Our second highest-ranked change in the 2012 survey, an increased emphasis on curricular change and assessment, is new and not ranked in the 2011 pilot study. Other changes noted in the pilot study that are not represented in the data set from the 2012 results are the difficulty of funding both existing and new services, and the difficulty of balancing generalist and specialist support. Online learning and emerging technological infrastructure for learning are reported as significant changes in the 2012 survey results. Both 2011 and 2012 results show library-related change as key — the 2011 pilot study reports the redefinition of the library as a prominent contextual shift, and the 2012 survey focuses on new kinds of emerging digital research. In general, we see a pattern over the two study years of shifting from focusing on broad

changes, like services and the definition of the library, to specific changes including online programs, new technological infrastructure, and digital research methods.

In response to research question two, the top two challenges in the 2011 pilot study relate to engaging the community — communication then collaboration. Collaboration ranks second in the 2012 study as well, but financial constraints rank number one in 2012, and were not ranked at all in the 2011 pilot study. There are many similarities in the remaining elements of the top five organizational challenges listed in both studies. Respondents note the challenge of rethinking staff roles, organization or service models, and the challenge of dealing with change. In the 2011 pilot study, providing professional development for changing roles is noted as a challenge, as well as dealing with general change. In the 2012 study, professional development is not listed as a challenge, although it is mentioned as a strategic action. The kind of change noted as challenging in 2012 is more focused: dealing with rapid technological and organizational change.

In response to research question three, the first action cited in the 2011 pilot study — restructuring the library and IT department to survive in a world where it is not the “sole provider” — was not specifically mentioned in the 2012 study. The concept of collaboration and engagement with the community is a key theme of the 2012 survey, and ranks as the number one strategic action, as well the action ranked number two in the pilot study. The strategic action ranked number two in 2012 was not included in 2011 — addressing financial constraints from a proactive vantage point. The third- and fourth-ranked actions from 2011 pertained to rethinking the library/community liaison role and creating cultures that reward risk-taking. In the 2012 study, organizational transformation is the third-ranked action, and professional development the fourth. The fifth-ranked action from the 2011 pilot study calls for using ethnographic methods to engage and understand the community. The fifth-ranked action in 2012 is a desire to invest in strategy itself — the planning and visioning required to adapt to a world of change. There are remarkable thematic similarities between the two studies around community engagement, collaboration, and organizational transformation.

Future of A15

The spring 2012 A15 survey shows several areas of growth from the fall 2011 pilot study. Most specifically, the number of respondents doubled, which meant that the researchers had to recruit additional volunteer researchers and analysts. In addition, the researchers refined their methods. This included taking advantage of new online tools such as Skype, DropBox, and Google Docs to share information and keep data secure between the 15 researchers.

The researchers also refined the interview process to simplify the work for interviewers, while maintaining the valuable ethnographic data of unprepared responses to primary and follow-up questions. The researchers developed both a naming system for respondents and a method for keeping respondents and their code names isolated from survey result data. The researchers also collaboratively developed a coding system using 61 categories and a method that allows multiple researchers to code and quickly verify each other's codes. For the 2012 survey, the researchers also experimented with software that facilitates the analysis of quantitative data and hope to include the new level of analysis into our final report.

All results suggest that gathering A15 survey results for a third study will be fruitful. Refinements made for the 2012 study as well as further changes will make the collection and analysis of the data in the third study easier and more efficient. The investigators expect to implement the following: doubling the pool of respondents to 100, earlier recruitment and training of a volunteer researcher pool, possible separation of interviewing researchers and analyzing research volunteer pools; limitation of responses to “two” salient ideas per question, formalization of spontaneous or minimally prepared answers (for example, no reading of prepared statements or strategic plans), integration of survey respondent recruitment, personal data collection, and compliance notification into a one-time enrollment form. This will reduce the transition time from agreement to interview.

Conclusion

Disruptive innovations are a catalyst for positive changes in the evolution of services that support higher education. Examining library and IT staff approaches to the changes, challenges, and responses in their academic work environments yields a rich image of the current landscape. Faced with many changes — moving courses online, providing support for distance students, and finding replacements for waning resources — library and IT staff adopt various methods to meet the demands. Library and IT staff increasingly seek out collaborative partnerships, work within financial constraints, and influence the evolving model of what a library can be to its users.

The 2011 pilot study and 2012 A15 survey results and the longitudinal comparison reported in this paper provide higher education professionals with information to guide further research and decision-making about structural, staffing, and professional development strategies within their institutions. The pattern of change in library and IT staff attitudes toward disruption from the 2011 pilot study to the 2012 survey displays an evolution from general awareness to targeted problem-solving. This signals to administrators that support staff is ready to collaborate on designing, initiating, and managing creative responses to the demands of change and disruptive pressures. Staff members that experience the day-to-day interactions among faculty, students, and systems have a perspective on changes in higher education that can help administrators encourage evolution and protect their institutions from becoming obsolete.

About the authors

Dr. **Michael Stephens** is an Assistant Professor in the School of Library and Information Science at San Jose State University. His research focuses on use of emerging technologies in libraries and technology learning programs. He currently writes the monthly column "Office Hours" in *Library Journal* exploring issues, ideas and emerging trends in library and information science education. Stephens has spoken about emerging technologies, innovation, and libraries to audiences in over 26 states and in nine countries. He is fascinated by library buildings and virtual spaces that are designed for users, participation, creativity, and encouraging the heart.

Direct comments to: mstephens7 [at] mac [dot] com

David Wedaman is Director of Outreach for Brandeis University Library and Technology Services and Chair of the Board of Trustees, NorthEast Regional Computing Program.

E-mail: wedaman [at] brandeis [dot] edu

Ellen L. Freeman holds a M.Ed. degree in Instructional Technology from the University of Maine. She was formerly an Instructional Technologist with Academic ITS at Colby College and currently works as an Instructional Designer for Red Hat, Inc. She was involved in earlier ethnographic research studies at Colby College that were supported and published by the Council on Library and Information Resources (CLIR) and maintains a deep enjoyment of and belief in ethnographic research as a means to deepen perspectives. Ellen lives in Mid-Coast Maine with her family.

E-mail: ellenfreeman129 [at] gmail [dot] com

Alison Hicks is the Romance Language Librarian at the University of Colorado, Boulder. Alison holds an MSIS from the University of Texas, Austin and a M.A. in French and Spanish from the University of St Andrews, Scotland. She has lived and worked on three continents, including the public school system in Pamplona, Spain, at the Universidad Torcuato di Tella in Argentina, and the Inter-American Development Bank in Washington D.C. Her research interests are focused around critical information literacy, ethnography and foreign language librarianship.

E-mail: alison [dot] hicks [at] Colorado [dot] EDU

Gail Matthews-DeNatale is Senior Fellow at Northeastern University's Graduate School of Education (GPE), serving as lead faculty for the eLearning and Instructional Design concentration in the Master of Education program. She is on the Faculty Academic Council, serves as a faculty liaison for experiential learning and online portfolios within the College of Professional Studies, and is a member of the "Pedagogically-Sound, Technologically-Savvy" faculty peer learning group in the Graduate School of Education.

Before joining Northeastern, Gail served as Associate Dean of Graduate and Professional Programs at Emmanuel College, and before that as Interim Director and Associate Director of Academic Technology at Simmons College. While at Simmons, she spearheaded the Sloan-funded Blended Learning Initiative and fostered curricular innovation through her work with digital storytelling and other emerging technologies.

Regionally and nationally, Gail is a founding board member of AAEEBL, the Association for Authentic, Experiential and Evidence-Based Learning. She has also served on the NERCOMP Board of Trustees, was the organization's "Teaching, Learning, and Assessment" conference track chair from 2005-08, and the ePortfolio SIG Master from 2003-09. She has been a grants panelist for numerous funding entities, most recently for the National Endowment for the Arts, Arts in Education program. She has given keynote at many conferences and workshops, including the Educause Learning Initiative, eTech Ohio, and the Connecticut Distance Learning Consortium.

In 2013 she received the Sloan-C International Conference on Online Learning's "Learning Effectiveness" Best-in-Track award for her presentation and article entitled "Are We Who We Think We Are? ePortfolios as a Tool for Curriculum Redesign." In 2006 the online faculty institute that Gail co-developed, "Learning About Learning Online," received the Exemplary Course Award from the Greenhouse Exemplary Course Project. In 1998 she received the Dorothy Howard education award for CARTS, a online resource for educators interested in incorporating cultural diversity and local culture into their teaching.

E-mail: gmdenatale [at] yahoo [dot] com

Diane Wahl is User Experience Librarian at the University of North Texas in Denton. Her research interests focus on distance learners, commuter students and other non-traditional students, as well as on the changing professional requirements of academic librarians. Before her position at North Texas, she spent 20 years in information technology as a programmer, business analyst, project manager, trainer and consultant. It was during this time that she learned the critical importance of listening to the voice of the customer. Diane holds a B.A. in English and history from Baylor University, an M.A. in English from Emory University, and an MLS from the University of North Texas.
E-mail: Diane [dot] Wahl [at] unt [dot] edu

Lisa Spiro is executive director of Digital Scholarship Services at Rice University's Fondren Library. Lisa has published on a range of topics related to technology and higher education, including a study for the Council on Library and Information Resources (CLIR) investigating "Can a New Research Library be All-Digital?" (with Geneva Henry), an analysis of how researchers in American literature and culture use digital archives (with Jane Segal), and an essay imagining an open, networked certificate program for the digital humanities. She has contributed essays to *Debates in the Digital Humanities*, *#alt-academy: Alternate Academic Careers for Humanities Scholars*, and *Collaborative Approaches to the Digital in English Studies*. A Frye Leadership Institute fellow, Lisa serves as the Communications Officer for the Alliance of Digital Humanities Organizations and on the Executive Council for the Association of Computers and the Humanities, as well as on the Program Committee for the Joint Conference on Digital Libraries. Lisa holds a B.A. in English and history (*magna cum laude*) from Rice University and a Ph.D. in English from the University of Virginia.
E-mail: lspiRO [at] ntle [dot] org

Acknowledgements

Collaboration was not just an important topic that emerged from the A15 study, it was also important to our own work processes. With the second iteration of A15, the primary investigators wanted to interview a wider range of academic support professionals, which required building a larger team of interviewers. To recruit interviewers with experience in participatory design, we sent an e-mail message to the ANTHROLIB listserv. We also made contact with others interested in this work. Each interviewer participated in a conference call to learn about the A15 process and used an orientation handbook. Each volunteer interviewed about five people, drawing from a master list and, in some cases, from their own professional contacts.

We would like to acknowledge the hard work and contributions by the following research fellows:

- Susanna Cowan, University of Connecticut
- Sheree Fu, Claremont University Consortium
- Ellen Freeman, Colby College
- Scott Hamlin, Wheaton College
- Debra Kolah, Rice University
- Angela Walker, Hall Memorial Library and Mansfield Public Library
- Sherrill Weaver, Oakton Community College

Notes

- [1.](#) Christensen, 2000, p. 15.
- [2.](#) Christensen and Eyring, 2011, p. xxiii.
- [3.](#) Christensen and Eyring, 2011, p. xxv.

References

Janna Quitney Anderson, Jan Lauren Boyles, and Lee Rainie, 2012. "The future impact of The Internet on higher education," *Pew Internet & American Life Project*, at http://www.pewinternet.org/files/old-media/Files/Reports/2012/PIP_Future_of_Higher_Ed.pdf, accessed 12 March 2014.

Randy Bass, 2012. "Disrupting ourselves: The problem of learning in higher education," *EDUCAUSE Review*, volume 47, number 2, pp. 23–33, and at <http://net.educause.edu/ir/library/pdf/ERM1221.pdf>, accessed 12 March 2014.

Clayton M. Christensen, 2000. *The innovator's dilemma: When new technologies cause great firms to fail*. New York: HarperBusiness.

Clayton M. Christensen and Henry J. Eyring, 2011. *The innovative university: Changing the DNA of higher education from the inside out*. San Francisco: Jossey-Bass.

Eden Dahlstrom, J.D. Walker, and Charles Dziuban, 2013. "ECAR study of undergraduate students and information technology, 2013," *ECAR Research Hub* (16 September), at http://www.educause.edu/library/resources/ecar-study-undergraduate-students-and-information-technology-2013?utm_source=Informz&utm_medium=Email+marketing&utm_campaign=Student+study, accessed 14 March 2014.

EDUCAUSE, 2010. "The future of higher education: Beyond the campus" (January), at <http://www.educause.edu/library/resources/future-higher-education-beyond-campus>, accessed 11 March 2014.

James Euchner, 2011. "Managing disruption: An interview with Clayton Christensen," *Research Technology Management*, volume 54, number 1, pp. 11–17, and at http://www.iriweb.org/Public_Site/RTM/Volume_54_Year_2011/Jan-Feb2011/Managing_Disruption.aspx, accessed 12 March 2014.

FSSE, 2014. "2013 survey instrument," at http://fsse.iub.edu/html/survey_instruments.cfm, accessed 12 March 2014.

Larry Johnson, Samantha Adams, and Michele Cummins, 2012. *The NMC Horizon Report: 2012 higher education edition*. Austin, Tex.: New Media Consortium, at <http://www.nmc.org/publications/horizon-report-2012-higher-ed-edition>, accessed 14 March 2014.

LibQUAL+, 2014. "What is LibQUAL+®?" at <https://www.libqual.org/home>, accessed 12 March 2014.

Measuring Information Services Outcomes (MISO), 2010. "About the MISO Survey," at <http://www.misosurvey.org/>, accessed 11 March 2014.

National Survey of Student Engagement (NSSE), 2014. "About NSSE®," at <http://nsse.iub.edu/html/about.cfm>, accessed 11 March 2014.

Jeffrey Selinger, 2013. *College (un)bound: The future of higher education and what it means for students*. Boston: Houghton Mifflin Harcourt.

Editorial history

Received 22 March 2013; revised 4 April 2014; accepted 5 April 2014.

"Academic 15: Evaluating library and IT staff responses to disruption and change in higher education" is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

Academic 15: Evaluating library and IT staff responses to disruption and change in higher education by Michael Stephens, David Wedaman, Ellen Freeman, Alison Hicks, Gail Matthews-DeNatale, Diane Wahl, and Lisa Spiro.

First Monday, Volume 19, Number 5 - 5 May 2014

<https://firstmonday.org/ojs/index.php/fm/rt/prINTERfriendly/4635/3878>

doi: <http://dx.doi.org/10.5210/fm.v19i5.4635>