JOLIE GRAYBILL

Scholarly and Creative Activities

Publications

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     REFEREED
   - **Graybill, J.O.** (Accepted for publication, DOI 10.1016/j.acalib.2013.09.006, http://www.sciencedirect.com/science/article/pii/S0099133313001183). Millennials among the professional workforce in academic libraries: Their Perspective on Leadership. *Journal of Academic Librarianship*. Elsevier Science.
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   - **Graybill, J.O.**, Carpenter, M., Offord, J., Piorun, M., & Shaffer, G. (2013). Employee onboarding: Identification of best practices in ACRL libraries. *Library Management, 34*(3).
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   - Carpenter, M. & **Graybill, J.O.** & Jerome Offord Jr & Piorun, M.(2011). Envisioning the library's role in scholarly communication in the Year 2025. *portal: Libraries and the Academy* 11(2), 659-681. The Johns Hopkins University Press.
     REFEREED
   - **Graybill, J. O.**, & Bicknell-Holmes, T. (2013). Location, location, location: impact of IM widget placement. *College and Undergraduate Libraries, Summer.*
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   - Martin, C. K., Maxey-Harris, C., **Graybill, J.O.**, & Rodacker-Borgens, E. K. (2009). Closing the gap: Investigating the search skills of international and US students: an exploratory study. *Library Philosophy & Practice*, *2009.* 1-17
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2. Research Folder
   - Research complete – Submitted for publication and currently under review. Graybill, J.O., Cultivating a Future for Tribal College and University Libraries in Increasingly Challenging Economic Times**,** *Journal of Academic Librarianship*. Elsevier Science. **REFEREED**.
   - Journal article – **Current Index to Statistics vs. MathSciNet for the Highly-Cited Statistician: Necessary Coverage or Unnecessary Redundancy**? Jolie Graybill, David C. Tyler, et al., data collection complete, writing in progress.

3. Presentations Folder
    - International Conference of Indigenous Archives, Libraries, and Museums, "Cultivating a Future for Tribal College and University Libraries in Increasingly Challenging Economic Times," facilitated 2 Round Table Discussions, Santa Ana Pueblo, NM, June 10-13, 2013.
    - ARL Leadership Symposium, "Resume Review Session" facilitated the Resume Review Session for Leadership Symposium 33 attendees, Seattle, WA, January 2013
    - ARL Initiative to Recruit a Diverse Workforce Mentor/Protégé Webinar Presentation, presented with Mark Puente via WebEx interface, December 2012
    - UNL Libraries Brown Bag "Millennials and Their Leadership Perspective" November 2012
    - Invited Panel Presentation at ALA Mid-Winter Conference, "Is a PhD in LIS for You? Sponsored by ALA Office of Diversity; Dallas, TX, January 2012
    - ARL Leadership Symposium, "Resume Review Session" participated as a Resume Reviewer for Leadership Symposium 25 attendees, Dallas, TX, January 2012
    - ARL Initiative to Recruit a Diverse Workforce Mentor/Protégé Webinar Presentation, presented with Mark Puente via WebEx interface, November 2011
    - Invited Panel Presentation "Taking it up a Notch: Career Advancement for Diverse Mid-Career Professionals" at the Celebrating 10 Years of Knowledge River at the University of Arizona, Tucson, AZ, November 2011
    - Invited Panel Presentation "How I Landed my First Librarian Job" Celebrating 10 Years of Knowledge River at the University of Arizona, Tucson, AZ, November 2011
    - Update Report at the ARL Diversity Committee in conjunction with the ARL Membership Meeting, Washington, DC, October 2011
    - UNL Libraries Brown Bag "Impact of IM Widget Placement" with Tracy Bicknell-Holmes, October 2011
    - Submitted and accepted UNL CONTENTdm Presentation, "Not just a bunch of pretty faces," Salt Lake City, UT, June 2010
    - Thank You letter from CONTENTdm Western Users' Group Meeting Conference Committee Chair, Kenning Arlitsch
    - Invited presentation on Digital Media Literacy for the National 4-H Teen Congress annual meeting, Atlanta, GA, November 2010
    - Invited presentation of research findings for the ACRL Personnel Administrators and Staff Development Officers Discussion Group at ALA Mid-Winter Meeting, Boston, MA, January 2010

APPENDIX TWO
Scholarly and Creative Activities
Publications

Brief Description:

- **Graybill, J.O.** (Accepted for publication early 2014). **Millennials among the professional workforce in academic libraries: Their Perspective on Leadership**. *Journal of Academic Librarianship*. Elsevier Science.
REFEREED
- Research complete – Book Chapter 7 –
Deards, K. D., **Graybill, J. O.** (2014). In print production – The role of professional protocols: recruitment, retention, and service. In Deards, K. & Springs, G. R. (Eds.), *Succession Planning and Implementation in Libraries: Practices and Resources*. Hershey, PA: IGI-Global. [Chapter]. [Expected publication date March 2014].
REFEREED

My Role:

For these three research projects, I participated as sole author and researcher for the "Millennials" research as well as the "Cultivating" research, and as a team member assuming responsibility for particular identified segments of the research process and subsequent writing for the "Professional Protocols". I assumed statistical responsibilities for the "Professional Protocols" research in addition to the data collection and writing sections I was responsible for completing.

Significance/Impact:

Millennials among the professional workforce in academic libraries: Their Perspective on Leadership examines the leadership perceptions of Millennials working in academic libraries, specifically their definition, the attributes they associate with leadership, whether they want to assume formal leadership roles, whether they perceive themselves as leaders, and whether they perceive leadership opportunities within their organizations and LIS professional associations. Study participants comprised of Millennials (born 1982 or after) currently working full-time in libraries that were a member of the Committee on Institutional Cooperation (CIC), a consortium of the Big Ten universities and the University of Chicago in 2011-2012.

Cultivating a Future for Tribal College and University Libraries in Increasingly Challenging Economic Times examines the possible futures of the libraries affiliated with the 12 Tribal Colleges & Universities that currently grant 2- and 4-year, and Masters' degrees. Scenarios are used with Library Directors to probe how they envision the future; which future they favor; which scenario is most relevant to their institution; whether the future will require new skill sets for the staff; what it takes for the institutions to adopt the preferred scenario; how much input they have in shaping the future; and what title frames their preferred future scenario.

The Role of Professional Protocols: Recruitment, Retention, and Service looks at the aspects of professionalism divided into four main categories: etiquette, professional behavior, personal presentation, and space (how people fill and use it). This chapter examines existing literature and contains the results of a survey of how library employees feel about professional protocols. It argues that the observance of professional protocols can impact student satisfaction as well as create a more positive work environment. Results of the survey indicate that libraries value professionalism with an emphasis on professional behavior.

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Millennials among the Professional Workforce in Academic Libraries: Their Perspective on Leadership

Jolie O. Graybill *

University of Nebraska-Lincoln Libraries, Image & Multimedia Collections Coordinator, 430 Love Library, P.O. Box 884100, Lincoln, NE 68588-4100, USA

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ABSTRACT

This study explores possible leadership perceptions of Millennials working in academic libraries, specifically their definition, the attributes they associate with leadership, whether they want to assume formal leadership roles, whether they perceive themselves as leaders, and whether they perceive leadership opportunities within their organizations and LIS professional associations. An online survey was utilized to gather the responses and the study participants comprised of Millennials (born 1982 or after) currently working full-time in libraries that were a member of the Committee on Institutional Cooperation (CIC), a consortium of the Big Ten universities and the University of Chicago in 2011–12.

It is not uncommon today for the workforce in academic libraries, be it professional or non-professional, to consist of three generations: the Baby Boomers (born 1943–1960) (Howe & Strauss, 2000), approximately 80 million in general population size; Generation X (born 1961–1981) (Howe & Strauss, 2000), a population less than half of the Boomers; and the Millennial Generation (also referred to as Echo Boomers, Next Gen, and Generation Y, born 1982–2002) (Howe & Strauss, 2000), whose general population number of 88 million plus exceeds all other generations. In a few instances, the workforce might also include the Traditionalist or Silent (or GI) Generation (born 1925–1942) (Howe & Strauss, 2000). While the generation definitions described previously were delineated by Howe & Strauss, it is also not uncommon to see a disparity, or blurred lines, in the exact years used to identify generations as well as the generation span. For example, Twenge (2006, 2010), a psychologist who researches extensively generational differences and the Millennial generation, defines Millennials as those born after 1982 in some work and those born in the 1970s, 1980s and 1990s in another; the Boomers as those born 1946–1964; and Generation X as those born 1965–1981. A Census Bureau (2011) study “The Older Population 2010” defines Boomers as also born from 1946 to 1964. Another research article for the Joint Center for Housing Studies at Harvard by Masnick (2012) defines Generation X as 1965–1984. In comparison, Zemke, Raines, and Filipczak (2000) defines Boomers as 1943–1960, Gen Xers as 1960–1980, and Millennials as anyone born 1980 and after, while Beck (2001) defines Gen Xers as 1963–1977. Similar to one but still different from Twenge's definitions, Lancaster and Stillman (2002) state that Boomers are 1946–1964, Gen Xers are 1965–1980, and Millennials are 1981–1999. The length of a generational unit typically spans from 15 years to as many as 24 years depending on which definition is utilized and mirrors the disparity of defined generations discussed previously (Foot, 1998; Hicks & Hicks, 1999; Lancaster & Stillman, 2002; Martin & Tulgan, 2001; Meredith, Schewe, Hiam, & Karlovich, 2002; Strauss & Howe, 1991; Tapscott, 1998; Zemke et al., 2000). Some of Twenge's (2006) research is based on a thirty year span and on the other end of the spectrum there are research proponents for shortening the span to 10 years due to today's rapidly changing world.

As Baby Boomers and the remaining Traditionalists retire, they often vacate positions as managers and assigned leaders (Northouse, 2007). The first quarter of 2013 found 16 Association of Research Libraries (ARL) institutions either in the midst of conducting a library dean search, announcing a library dean recruitment, or announcing an impending retirement. If new hires are included, the number jumps to over 20, and if non-ARL colleges and universities are included, the number jumps significantly again. This does not include associate dean, director, or mid-management positions with open, active recruitments within academic libraries. Millennials possess the sheer numbers to eventually fill these vacated management slots (Howe & Strauss, 2000). While they have not yet assumed managerial or formal leadership positions to the extent that Generation X has, there will be increased opportunities as well as expectations that Millennials will become managerial leaders and fill the void created by the retirement of Traditionalists and Baby Boomers.

Despite all of the writings on leadership that now appear in the literature of library and information science (LIS), no studies have probed the perceptions of Millennials working in academic libraries about their definition of leadership, the attributes they associate with leadership, whether they want to assume formal leadership roles, whether

* Tel.: +1 402 472 8182.
E-mail address: jgraybill3@unl.edu.

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they perceive themselves as leaders, and whether they perceive leadership opportunities within their organizations and LIS professional associations.

The findings from this study may provide insight, understanding, and possible direction for libraries facing increasing retirements and having a need to fill the subsequent leadership vacancies. The findings may also provide background information for those interested in attracting members of the next workforce, and those developing leadership programs geared to Millennials as well as the library managers seeking to motivate and engage these individuals. In addition, the insights will assist managers in cultivating and helping Millennials to develop their awareness, knowledge, and skill set related to managerial leadership.

LITERATURE REVIEW

Social sciences researchers have examined the leadership preferences of Millennials, the differences between Millennials and other generations, and the management preferences and practices of Millennials in the general workforce. The leadership literature has compared Millennials to other generations in terms of perspectives or leadership theories, or identifying values or organizations commitment, or what Millennials want to see in their leaders. Many of the studies have used traditional methods for gathering the information such as face-to-face interviews, phone interviews, and written surveys.

Gage (2005) compared the leadership perceptions of the Traditionalist and the Millennial generations in selected Midwestern towns. She explored leadership theories to examine how each generation answered her questions and determined that followership (part of many theories) and servant leadership stood out for both the Millennials and Traditionalists in her study. Influence, a component of leadership, plays a role for both leaders and followers. Gage determined that for Millennials and Traditionalists, neither group was necessarily seeking either a role as leader or follower in their quest to work with others. For example, Gage found that Traditionalists simply did what needed to be done. Millennials, on the other hand, value relationships and it is these relationships that motivate them to become involved. The involvement component, becoming active, from both generations is what creates influence and is based on their willingness to get involved despite differing reasons for the involvement. Hence, leadership is formed from the one relationship that incorporates both leaders and followers (Gage, 2005).

Kaiser (2005), who examined the organizational values and commitment of the four generations employed at one community college, found that Boomers and those in Generation X have a higher organizational commitment than do Traditionalists or Millennials. For Millennials, this translates into adaptability and a willingness to change jobs if the current organization does not meet their needs. Kaiser points out that the Millennials' commitment to the organization centers on three aspects: (1) their degree of belief and acceptance of organizational goals and values; (2) their willingness to exert effort on behalf of the organization; and (3) their desire to continue employment within the organization.

Stratman (2007) asked twenty Mexican American youths born between 1983 and 1987 about the attributes they associate with leadership, and the leadership attributes they prefer from leaders within the workplace. He found that they value the relationships with their leaders while expecting there to be a friendship component in the relationship. Teamwork evolved as an important aspect of how participants wanted tasks to be assigned. When making these selections, Millennials felt it was important to choose the individuals best equipped or suited to complete tasks based on skill set as opposed to tenure or seniority.

Dulin (2008), who studied leadership preferences of Millennials through a mixed methods methodology, discovered that, while they are extremely high-tech, they manage their relationships with others, thereby practicing a component of emotional intelligence. Emotional intelligence is a leadership theory that describes an ability to perceive, assess, and manage the emotions of one's self, and of others. The initial focus groups facilitated by Dulin revealed five themes: competency, self-management, communication, interpersonal relations, and management of others (Table 1). The Leadership Preference Inventory that Dulin used was developed based on the five focus group themes that emerged in an attempt to validate the themes. Dulin's study found that while Millennials as a whole may be very high tech, they very much want relationships with high touch, preferring leaders who can act comfortably as mentors (Dulin, 2008).

Dulin's study demonstrated important findings unique to Millennials and mirrors other research. For example, work–life balance is critical to Millennials and, unlike previous generations, this cohort is unwilling to sacrifice personal pursuits for any type of professional success. The Millennials value their personal lives, families, and hobbies over the desire for control, recognition, or responsibility through managerial leadership positions (Mosley, 2005; Twenge, 2010; Wilcox & Harrell, 2009). The formal bureaucracies in which open communication, collaboration and teamwork are non-existent will not meet the needs of Millennials serving on teams where they expect open communication (Howe & Strauss, 2000).

To summarize the key attributes for Millennials identified in the research body: they place great importance on achieving work–life balance; are accustomed to working in groups or team; engage in multi-tasking, and use multiple technologies in their daily lives; (Espinoza, Ukleja, & Rusch, 2011; Foltz, 2010; Lippincott, 2010; Murray, 2011) have success in securing resources (e.g., funds and technology); have an ability to build partnerships and working relationships; are committed to professional development; and support for work/life balance (Young, Hernon, & Powell, 2006). Turning to the perspective of library directors, they expect their replacements to be committed to service, results oriented, effective communicators, and able to delegate authority (Hernon, Powell, & Young, 2003).

PROCEDURES

The Committee on Institutional Cooperation (CIC), a consortium of the Big Ten universities and the University of Chicago, consisted of 13 academic institutions at the time the study was conducted, and it served as the study population. During the fall, 2011, the investigator contacted administrators at each university library to determine the number of Millennials currently on staff. The 11 responding libraries reported a total of 164 individuals; one library did not reply and the other declined to disclose the information.

The majority of responding officers stipulated that the library would distribute the survey to those eligible to participate and to let these individuals decide whether to participate. If there was no such stipulation, the investigator contacted the libraries for the names of participants so she could invite their participation in the study. The stipulation was agreeable to the investigator and data collection began April, 2012, after the Simmons Institutional Review Board granted approval.

Once participants were confirmed as willing to participate and signed consent forms received, the survey web link was distributed as an e-mail message either to the CIC officer or sent directly to individuals depending on library and participant preference. A modified version of Dulin's Leadership Preference Survey was administered through FluidSurvey. FluidSurvey is an affordable, easy-to-use online survey software tool for creating, managing, and analyzing research derived from online surveys. Dulin's set of attributes listed in the instrument was modified and the final two questions were rewritten for greater clarity. The revised set of attributes corresponds to the general ones listed in Northouse (2007). For example, questions not supporting Northouse's leadership attributes were deleted, and additional questions were added. The methodology selected recognizes that Millennials are continually online and operate with immediacy.

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Before distribution of the survey in April, the investigator asked her cohort in the Simmons College doctoral program, Managerial Leadership in the Information Professions, to review the data collection instrument for critical comments. The pre-test of this group revealed some items needing revision (e.g., correcting a link). Lastly, the researcher's Simmons College PhD advisor reviewed the instrument, requesting some additional changes, including changing the scale from five- to ten-points.

For those failing to complete the survey, a follow-up reminder e-mail message was sent two weeks after receipt of the signed consent form. Another reminder was sent one week before the due date, if necessary. A final reminder e-mail message was sent the day before the identified completion date.

FINDINGS

Table 2 indicates the distribution of Millennials among the libraries and these individuals include those in the professional and paraprofessional workforce. They are library faculty, managerial professionals, and/or library staff/specialists depending on the institution. No student workers were included. Of the 164 Millennial invited to participate, survey responses were obtained from 49 individuals. One did not meet the criteria (born 1982 or after) and was purged for a response rate of 29.2% (48 individuals).

The age range of 27–29 years old and born 1982–1984 encompassed 64.5% of the respondent population. Of the forty-eight respondents, 70.8% were female. Race and ethnicity revealed respondents to be predominantly of White or Caucasian descent, with only one each of Asian descent and of American Indian/Alaska Native descent. A total of 70.8% of the respondents possessed a bachelor's degree, 58.3% earned a master's degree in LIS, and 16.6% selected “Other”. Seven respondents hold master's degrees in another discipline, and one had a PhD degree. In terms of employment categories, 35.4% work in library assistant positions, 12.5% in professional/managerial positions, 31.2% in librarian/faculty positions, and 20.8 in library staff positions.

LEADERSHIP DEFINED

When asked to define leadership, 22 (45.8%) individuals defined it without using any of the 11 attribute terms provided (see Table 3). In addition, 14 (63.6%) defined leadership using a leadership perspective while 8 (36.4%) using a management perspective such as “Ability to get things done, take charge”. Of the remaining individuals defining leadership, a frequency count revealed, when compared to the leadership attributes from the list provided, that 41.6% identified leadership with “group/teamwork,” and 25% used vision in their definition (see Table 4).

When respondents selected attributes from the list provided, “communication” was selected by 47 (97.9%) of the respondents, with “respect” chosen by 41 (85.4%) of the respondents, followed by “vision” with 38 (79.1%), “influence” preferred by 36 (75.0%), “trust” elected by 33 (68.7%), “integrity” designated by 31 (64.5), 30 (62.5%) selected “group/teamwork”, “honesty” chosen by 29 (60.4%), “innovation” identified by 26 (54.1%), “passion” with 21 (43.7%), and 19 (39.5%) opted for “challenge” (Table 5).

A closer examination of the relationship between the word frequencies of the first two survey questions reveals a significant Spearman's correlation of 0.708 (p-value = 0.0148) (Table 6) indicating that a word with a relatively high count on one question would tend to also have a relatively high count on the second question.

LEADERSHIP STATEMENTS

Respondents indicated, on a Lickert scale of 1 to 10, which of the 27 leadership statements they considered least important to most important (Table 7). The leadership statement respondents rated as most important were:

- A leader considers the impact of his/her decision on employees (9.0000000 mean);
- A leader works well with others (8.9791667 mean);
- A leader communicates clear expectations (8.9375000 mean);
- A leader treats everyone with respect (8.9166667 mean); and
- A leader recognizes that there is more than one way to do a job (8.8333333 mean).
- At the other spectrum, rated as least important statements were:
- Influence is an important component of leadership (7.3333333 mean);
- A leader controls his/her emotions (6.7708333 mean);
- A leader has a good sense of humor (6.7708333 mean);
- A leader communicates with passion (6.5833333 mean); and
- A leader does not take risks (2.9791667 mean).

Table 1
Millennials' leadership preferences (Dulin).

Five core themes depicting leadership preferences of Millennials
1.) Interpersonal relations
2.) Competency
3.) Self management
4.) Management of others
5.) Communication

Table 2
CIC member institutions and number of Millennials on library staff.

Institution	Number of Millennials employed	Number of Millennials who responded to survey
University of Chicago	–[a]	9
University of Illinois at Urbana-Champaign	12	2
Indiana University	13	4
University of Iowa	2	6
University of Michigan	55	6
Michigan State University	14	2
University of Minnesota	–[a]	2
University of Nebraska-Lincoln	10	5
Northwestern University	22	3
Ohio State University	–[a]	1
Pennsylvania State University	26	2
Purdue University	6	4
University of Wisconsin-Madison	4	3
Total:	164	49

[a] These particular institutions did not respond with requested information.

Table 3
Millennials defined leadership in their own words.

Definition
Collaborative act of guidance, direction and action
Ability to inspire to achieve goal
Assertive and willing to complete the work to finish
A person who can make things happen
Ability to get things done, take charge
Taking the initiative, convincing actionable plans
Leadership is both a quality and an action/process
Leadership is the art of bringing others in new directions
Leadership is coaching & providing knowledge/resources
Leadership is the ability to enact change
Leadership is the ability to guide, affect change, and make decisions
Leadership is ability to empower, inspire, and guide others to accomplish results
Leadership is taking responsibility to take risks and initiate change
Leadership is the ability to achieve goals with the assistance of others
Leadership is the quality someone has to give others the confidence to follow that person
Leadership is defined by dedication, integrity, creativity, humility, openness, vision for the future, positivity, humor, respect, and communication
Influencing and helping others achieve goals
Leadership is the ability to encourage others to follow your orders
Leadership is ability to organize and achieve common goal

Table 4
Millennials defined leadership in their own words using leadership attributes.

Traits	#	%
Group/teamwork	20	41.6
Vision	12	25.0
Influence	7	14.5
Respect	6	12.5
Communication	4	8.3
Integrity	3	6.2
Trust	3	6.2
Passion	2	4.1
Honesty	2	4.1
Innovation	1	2.0
Challenge	0	0.0
Other	22	45.8

Examining the leadership statements according to position held using the Kruskal–Wallis test revealed no difference in perceptions of those who were library faculty/managerial professionals from those who were library staff/administrative/technical support with the exception of statements #1.) A leader treats everyone with respect; #12.) Leaders have vision, as well as the ability to articulate and achieve that vision; and #27.) A leader recognizes that there is more than one way to do a job. Leadership statements #1 and #27 were also rated by respondents as part of the top five most important statements (see above).

LEADERSHIP PERCEIVED

Next, respondents indicated whether they consider themselves a leader, their perceptions of leadership opportunities within their current organization or the professional associations of which they are a member, and whether they, if not currently in a leadership position, would like to assume a leadership position either in their organization or the professional associations they belong to.

Fig. 1 illustrates how respondents answered the five questions. Thirty-four (70.8%) of the respondents consider themselves a leader compared to 14 (29.1%) who do not consider themselves a leader. In response to whether they perceive barriers exist in assuming leadership roles in their organizations, half indicated that barriers existed and the other half did not believe so. The majority, 39 (81.2%) do not perceive barriers exist in assuming leadership roles in the professional organizations of which they were members compared to nine (18.7%) who did perceive barriers exist in assuming leadership roles.

DISCUSSION

A frequency count of leadership attributes referenced by Millennials when defining leadership in their own words revealed that group/teamwork was the top leadership attribute. This is consistent with research and general literature on Millennials as this group is "team oriented," and reflects their role in academic libraries where more than half work as either library assistants or librarians/faculty as opposed to leadership positions. They worked in groups and teams throughout their lives in both academic and extracurricular activities from wearing school uniforms to playing in team sports (Buchanan, 2010; Downing, 2006; Emeagwali, 2011; Howe & Strauss, 2000; Moore & Wells, 2009; Murray, 2011). Further evaluation of the definitions also revealed that many individuals utilized terms associated with management in their responses as opposed to leadership terms. Vision and influence were the next attributes identified when Millennials define leadership in their own words. When respondents again elaborated in their own words whether they consider themselves a leader, group/teamwork and Communication emerged as top attributes.

The frequency count when respondents identified attributes associated with leadership from the list provided on the survey indicated that communication, respect, and vision were the top attributes identified.

Table 5
Millennials identified leadership traits from list provided.

Traits	#	%
Communication	47	97.9
Respect	41	85.4
Vision	38	79.1
Influence	36	75.0
Trust	33	68.7
Integrity	31	64.5
Group/teamwork	30	62.5
Honesty	29	60.4
Innovation	26	54.1
Passion	21	43.7
Challenge	19	39.5
Other	11	22.9

Table 6
Spearman's correlation.

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Own term	11	5.45455	5.87135	3.00000	0	20.00000
List term	11	31.90909	8.36008	31.00000	19.00000	47.00000

Correlation coefficients, N = 11

Prob > |r| under HO: Rho = 0 Own

	Own term	List term
Own term	1.00000	0.70777 0.0148
List term	0.70777 0.0148	1.00000

Table 7
Mean and standard deviations for leadership statements.

Leadership statement	Mean	Standard deviation	Number of respondents
A leader considers the impact of his/her decisions on employees	9.0000000	1.1669199	48
A leader works well with others	8.9791667	1.2797869	48
A leader communicates clear expectations	8.9375000	1.1560433	48
A leader treats everyone with respect	8.9166667	1.2174849	48
A leader recognizes that there is more than one way to do a job	8.8333333	1.1172408	48
A leader is a good listener	8.7916667	1.1290805	48
A leader is approachable	8.6875000	1.5731287	48
A leader has thorough knowledge of the organization	8.6458333	1.1758127	48
A leader is trustworthy	8.6458333	1.3603752	48
A leader provides encouragement	8.6250000	1.2484032	48
A leader provides constructive feedback	8.6250000	1.4821635	48
A leader models ethical behavior	8.5625000	1.4277828	48
Leaders have vision, as well as the ability to articulate and achieve that vision	8.5000000	1.3208637	48
A leader inspires others to follow	8.4791667	1.5157272	48
A leader communicates with confidence	8.3750000	1.3148093	48
Leaders have a positive attitude	8.2083333	1.7978514	48
A leader is a problem-solver	7.8333333	1.5619591	48
A leader describes a compelling image of what the future could be	7.8333333	1.6155275	48
A leader values diversity	7.8333333	1.8373586	48
A leader is not afraid to fail	7.7500000	1.4946714	48
A leader places the good of organization/team over the individual	7.5416667	1.7253841	48
Leadership is a life-long process	7.5416667	2.6008046	48
Influence is an important component of leadership	7.3333333	1.9821902	48
A leader controls his/her emotions	6.7708333	1.8593019	48
A leader has a good sense of humor	6.7708333	2.0236851	48
A leader communicates with passion	6.5833333	2.2675634	48
A leader does not take risks	2.9791667	1.6175840	48

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While the order may have changed slightly between the lists in terms of responses, if an attribute had a relatively high count on one question, it also had a relatively high count on the next question. Like Dulin's study, participants in this study indicated that communication and interpersonal relationships were extremely important.

The general literature on Millennials seems to indicate that this group is more compassionate and community service/civic minded than other generations (Baggott, 2009; Buchanan, 2010), and this researcher expected to find more leadership attributes associated with compassion or empathy in the frequency counts. However, only two individuals used attributes such as "compassion" or "empathy" in their definitions. This small number supports the findings of Twenge, Freeman, and Campbell (2012) which states that while the Millennials were required to do community service during school, it is not an attribute that is widely adopted by the Millennials outside of school requirements.

For the generation that is considered "hyper connected" or "always on", quality face-to-face time, relationships and personal connections appear to be extremely important to the Millennials (Behrstock-Sherratt & Coggshall, 2010; Coley, 2009; Dulin, 2008). Immediate feedback is a component of face-to-face interaction, and the Millennials experienced immediate feedback since their preschool days (Howe & Strauss, 2000). Again, the frequency counts did not reveal that many of the Millennials valued these attributes enough to mention them in their definitions of leadership. However, communication is an important component of the above mentioned attributes, and communication was identified as a top attribute as noted earlier (Dulin, 2008; Young et al., 2006).

A scan of research on Generation Xers shows some similarities with Millennials in terms of "desire for a nurturing environment, teamwork, mentoring, open and frequent communication" and provide somewhat of a central theme for the two cohorts while recognizing that these two cohorts' attributes identified as most desirable are significantly different from the attributes identified as most desirable by academic library directors (Young et al., 2006). For instance, only a small percentage (17.5) of the Gen-X attributes were ranked as highly by library directors as they were ranked by Gen-Xers (Young et al., 2006).

The respondents provided similar answers to the questions about their interest in leadership. Both males and females responded positively to the questions of whether they consider themselves a leader, and if not in a leadership position, would they like to assume such a position in their library. When asked about whether barriers exist in their organization or the professional organizations they belong to—there was a difference in the responses. It appears that more respondents (50%) perceived barriers exist in assuming leadership roles in their organizations compared to only 18% of respondents who perceived that barriers exist in assuming leadership in their professional organizations.

Areas for future research include expanding the study to include all of the academic Association of Research Libraries institutions or to include the next tier of college and university libraries within the United States to verify that the results are consistent across public and private institutions as well as across geographic regions. Another area for research potentially includes examining management courses in library schools to determine if the curriculum addresses the changing view of leadership and the role Millennials will play in organizations. Furthermore, the evaluation of the effectiveness of changes in leadership training for preparing Millennials for leadership positions based on these findings would be useful to human resources managers and trainers.

CONCLUSION

The leadership attributes which Millennials indicated as most important (i.e., group/teamwork, communication, respect, vision, and influence) are aspects of leadership that should be reviewed as current administrators prepare and plan professional development programming for future leadership opportunities that will most likely be filled by Millennials. Traditional leadership programming emphasizing individual skills may be less effective for today's Millennials. Incorporating "leadership development programs focused on next-generation leadership skills: collaboration, cross-cultural dialogue, team leadership and service leadership" should be the basis of creating new training models (Baggott, 2009). Specifically, development opportunities for Millennials to prepare them for leadership roles should include developing effective teams, advance communications skills, and instilling positive organizational values such as respect for others. This study may provide guidance to hiring supervisors in looking for people with leadership skills to understand that the Millennials' comfort areas are teamwork, respect, and communication. This may mean that supervisors as a result, need to redesign positions to take advantage of the teamwork interests and skills while also providing Millennials with more support on the other leadership attributes that they might not be as skilled in.

Results from research conducted by Mackenzie and Smith (2009) related to management education for library directors suggests that there is no agreement from the library profession on how to prepare future librarians for leadership and managerial roles. Despite this disagreement, current training opportunities do exist through programs such as San Jose State University's Executive MLIS program

Fig. 1. Leadership opportunities perceived by Millennials.

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(Blumenstein, 2005) or Simmons College's Managerial Leadership for the Information Professions (Hernon & Schwartz, 2008).

And finally, differences are identified in Millennials' leadership attributes when compared to those identified by current ARL directors, as pointed out in Young et al. (2006). For example, Millennials identified building working relationships with others as important while ARL directors, in comparison, identified it as only mildly important (a 3 on a scale of 1 to 10 with 10 being most important. This information lends credence to the importance of considering and incorporating the preferences of the up and coming generations as the next round of leadership.

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The Role of Professional Protocols: Recruitment, Retention, and Service

Kiyomi D. Deards, Jolie O. Graybill
University of Nebraska-Lincoln, United States

Author Bios:

Kiyomi Deards has been an assistant professor and science librarian with the University Libraries at the University of Nebraska-Lincoln since 2010. She is currently the subject librarian for Chemistry, Biochemistry, Physics and Astronomy. Deards serves on the University Judicial Board, the ALA NMRT mentoring committee, the ACRL 2013 volunteers committee, and UNL Libraries' data curation committee. Deards has presented at ALA, ACRL, and Science Online on a variety of topics including: succession planning in academic libraries, developing communities of practice, marketing yourself in science, data discoverability, and promoting open access repositories. Her research interests include issues of equity and management in libraries and science.

Jolie Graybill has been an assistant professor and Image & Multimedia Collections Coordinator with the University Libraries at the University of Nebraska-Lincoln since 2008. She first served at UNL Libraries in 2005 as a Multicultural Services Librarian, where she supported faculty and students in ethnic and multicultural studies. From 2006 to 2008, she worked with Northern Arizona University's Cline Library as Academic Programs Librarian/Social and Behavioral Sciences Team Leader. Graybill earned her MLIS from the University of Arizona and was a participant in ARL's Initiative to Recruit a Diverse Workforce scholarship program and the University of Arizona's Knowledge River Program. She holds a master's in education in youth development leadership from the University of Minnesota and a bachelor's of science in journalism from the University of Kansas. She is currently working on her PhD through Simmons College in managerial leadership in the information professions.

ABSTRACT

The cultivation of professionalism is a necessary part of training the academic and research library leaders of the future. By incorporating professionalism into succession planning efforts individuals acquire skills that will serve them across institutions as they transition between positions of power. For the purposes of this study the aspects of professionalism were divided four main categories: etiquette, professional behavior, personal presentation, and space (how people fill and use it). This chapter examines existing literature and contains the results of a survey of how library employees feel about professional protocols. It argues that the observance of professional protocols can impact student satisfaction as well as create a more positive work environment. Results of the survey indicate that libraries value professionalism with an emphasis on professional behavior.

INTRODUCTION

The importance of professionalism at all levels in the library work environment has been largely ignored in succession planning. Succession planning has traditionally focuses on the grooming of individuals to lead a single organization (Nixon, 2008; Rothwell, 2005; Singer & Griffith, 2010). The need to retain individuals has also been addressed, but with a focus on grooming them for management positions within their current organization (Singer & Griffith, 2010). In reality, while people may be groomed to be successful leaders there is no guarantee in today's changing society that they will remain within that organization. Even if a person takes on a leadership role within their organization, many leaders changes organizations every five to ten years. Thus it is important to teach leaders the skills and tools to succeed not just in one institution, but across multiple institutions (Webster & Jones, 2009). Additionally, the question of whether or not librarianship is a profession has been an ongoing debate within the professional literature and, more recently, on the Internet (Abbott, 1988; DeWeese, 1972; Harris, 1993; Plummer, 1903; Potter, 2010). This questioning of librarianships status as a profession often includes questioning the worth of a master's degree in library science (Potter, 2010). It has also been examined as a source of conflict between librarians and staff, who are sometimes labeled paraprofessionals (Jones & Stivers, 2004). It may appear that librarians are unique in questioning their own professionalism, however, perceived declines in professionalism and similar questions have been raised among the clergy, financial, legal, medical, social services and other professions (Burger, 1993; Flexner, 1915; Noordegraaf, 2007; Schön, 1983).

This chapter explores professionalism across a broad spectrum of disciplines to define professional protocols. Professionalism will be examined not as a label granted by others or defined by a specific role in an institution, but as a set of behaviors and actions taken by individuals and organizations (Polk-Lepson Research Group, 2009). Protocols across professions will be discussed with a heavy emphasis on the business, medical, and sociological communities. Professional ethics will not be examined due to the substantial body of works devoted to that aspect of professionalism. A short survey was also conducted to discover how librarians ranked each type of professional protocol in terms of importance. For the purposes of this research protocols were divided into four categories: etiquette, professional behavior, personal presentation, and space (how people fill and use it). These protocols will provide guidance for libraries seeking to establish professional protocols by identifying key areas to be addressed and the protocols of concern within the library community. Establishing a more uniform set of professional protocols would lessen the perceived differences between institutional cultures and facilitate professional working environments, thus easing transitions in power at all levels. Professional protocols can also be used to ensure equitable treatment of employees by those in positions of power. Behavior that is perceived to be negative creates a negative environment and has been shown to increase employee turnover (Harris, Harvey & Booth, 2010). Maintaining a professional climate will help create the positive work environment necessary for employee retention (Zineldin, Akdag & Belal 2012). This can be critical to employee retention after an organization loses a popular leader (Zineldin, Akdag & Belal 2012). Most importantly, professional protocols will create a positive atmosphere which users of academic libraries, and potential applicants will pick up on creating a positive image of the organization (Zineldin, Akdag & Belal 2012).

Questioning Librarianship: What Is Professionalism

“The likelihood of a profession, namely librarianship, surviving depends to a large extent on its ability to articulate professionalism in such a way that it will meet the ever-changing needs of the library users of the future.” ~ Martha Kyrillidou, 2000

The questioning of what professionalism means in librarianship has been ongoing for over a century (Plummer, 1903; Harris, 1993). Traditionally professionalism has been largely validated by society through the attainment of specific knowledge and skills causing many groups to define themselves as professionals through some sort of accreditation process (Bledstein, 1976; Noordegraaf, 2007; Polk-Lepson Research Group, 2009; Walker, Hein, Russ, Bertlett, &, Caspersz, 2010). Hall’s Professionalism Scale demonstrates the perceived need to define professionalism through the following: associations, common ideology, self-regulation, having a career not a job, and autonomy (1968). This way of thinking causes individuals to look outward for a sense of worth in their profession (Noordegraaf, 2007). In social work, another public service profession, it has been shown that among younger students, “concern with their age was a recurring theme...In contrast, older students tended to draw on their age and experience to support their sense of professional confidence” (Fook, Ryan, & Hawkins, 2000). While it is useful for professionals to learn from others about professional conduct there are several professional protocols that all employees can follow, regardless of position or job description. Rather than look externally for validation librarians and staff should act in a professional manner in their interactions with students, faculty, staff, the general public, and each other (Ruppert & Green, 2011; Pellack, 2008; Noordegraaf, 2007; Polk-Lepson Research Group, 2009). While this may seem like a “fake it till you make it” attitude, treating others as we wish to be treated is an age-old adage. How can librarians and staff expect others to see them as professionals if they do not act in a professional manner? In 2009 the Polk-Lepson study of 520 human resources professionals and business leaders found that:

> The vast majority of respondents (88.1%) think of professionalism as being related to the person rather than the position. Anyone in any position has the potential to exhibit professional traits and behavior (2009, p. 9).

This line of thinking places the onus of professionalism on the individual. This point was further emphasized by Polk- Lepson’s 2009 finding that “50 percent or more of the hiring decision is based on an assessment of the applicant’s professionalism” (p. 14).

Maintaining a professional workplace requires employees to be as courteous with their colleagues as with those they serve (Pellack, 2008). Patrons see how individuals within an organization treat each other and judge the organization by this behavior (Pellack, 2008). Research has also demonstrated that as people change jobs more frequently professionalism becomes a key motivator for some individuals (Bieńkowska, 2012). By identifying professional protocols common to librarianship and other respected professions this chapter will define key protocols which should be considered and addressed across all institutions. Professionalism is a learned behavior defined and reinforced by the people around us (Humphrey, Smith, Reddy, Scott, Madara, Arora, 2007). The use of the labels non-professional, a particularly insulting term, or para-professional as an excuse to degrade professional staffs who work with librarians demonstrates a lack of professionalism on the part of both librarians and administrators (Fialkoff, 2010). These labels fail to acknowledge that professional library staff may have more years of experience and training than the librarians who they work with. This lack of professionalism towards library staff could be rectified by acknowledging that all workers have the ability to choose to act professionally and should be treated in a professional manner regardless of job title. The exact details of the protocols will vary from institution to institution. However, training all employees to think about and practice consistent professional protocols would help ensure maximum equity in the treatment of those who serve, and are served by, an organization. Many recent papers and online discussions within librarianship have centered on the question of whether or not librarianship is or is not a profession (Deschamps, 2010; Lepczyk, 2013; Litwin, 2010). This debate may be due in part to lack of unity, and lack of consistent protocols, making it difficult to define empirically whether librarianship is or is not a profession (Deschamps, 2010; Lepczyk, 2013; Litwin 2010).

DEFINING PROFESSIONAL PROTOCOLS

Etiquette

Etiquette is a broad category of professional protocols that encompasses the rules of behavior in society. These rules include holding a door open for someone with their arms full, or standing so that someone else may have a seat on the bus. Etiquette has been emphasized in programs designed to transition students to successful graduates, career coaching, and professional development workshops across disciplines. (Hansen, 2011; Kogod School of Business, 2012; Polk-Lepson Research Group, 2009; American Physical Society, 2012). Rules of etiquette cover how people interact in a professional setting, using email, social media, online message boards, and the phone, as well as at social business events, and during the job search (Hansen, 2011; Kogod School of Business, 2012; Mujtaba & Salghur, 2005; Polk-Lepson Research Group, 2009). Rules of behavior are often perceived as tiresome, yet, research has shown that negative employee interactions decrease efficiency and lead to higher rates of employee turnover (Dinger, Thatcher, Stepina, & Craig, 2012: Frisina, & Frisina, 2011: Pellack, 2008). Increased professionalism and confidence in managers equitable treatment of employees positively correlates to higher job performance and employee retention (Dinger, Thatcher, Stepina, & Craig, 2012). This section examines rules of etiquette in professional settings across a variety of disciplines including: business, law, libraries, information technology, and sociology.

The Kogod School of Business, part of American University in Washington D.C., spells out several distinct professional protocols for their students (2012). Timeliness is emphasized repeatedly: getting back to colleagues in a reasonable amount of time, writing of thank you notes, responses to job offers, and attendance of professional events (Kogod School of Business, 2012).

Fook, Ryan and Hawkins state “communication skills imply a facility to dialogue with all different types of people and groups, using lots of different media in different situations” (2000, p. 46). Businesses and organizations to develop their own rules of email etiquette to help ensure professional communication by their employees (Desai, Hart, Richards, 2009; Kogod School of Business, 2012). When workers do not observe proper email etiquette they not only risk appearing less than professional, but, depending on their actions, this can open the door for lawsuits against their company, (Desai, Hart, Richards, 2009; Erskine, 2011). Research has also indicated that individuals are more judgmental of others mistakes when they do not possess information about the culture or disabilities that may be hindering their correspondent (Vignovic & Thompson, 2010). While grammatical and spelling violations caused a negative perception of the writer by the participants, this perception could be mitigated by revealing the writers non-native status or disability (Vignovic & Thompson, 2010). However, when messages were short, but without error, revelation of the sender's status did not mitigate the participants' negative reaction to the message (Vignovic & Thompson, 2010). This demonstrates the need to communicate in a clear and concise manner while avoiding the temptation to send the shortest possible message and appearing rude or annoyed.

Equally important is how individuals present themselves through social media. Unlike emails which may be read by a limited audience, barring accidental mass emailing, participation in social media places information online that can potentially be viewed by anyone with an internet connection. Much emphasis has been placed on the ethics of what is posted online. But, even those postings which are not unethical can impact an individual when applying for a job, research grant, or when nominated for an award (AMA Council on Ethical and Judicial Affairs, n.d.: Greysen, Kind, & Chretien, 2010: George Washington University Law School Career Development Office, n.d.; Kogod School of Business, 2012). Behavior which is perfectly acceptable in private can be damaging if posted online. This creates the potential for friction between an individual's personal life and the expectations that their employers have of presenting a professional image (AMA Council on Ethical and Judicial Affairs, n.d.: George Washington University Law School Career Development Office, n.d.).

Social media is often seen as a mirror of an individual. This has led to a society in which one thoughtless picture, one 140 character tweet, blog post, Youtube video, LinkedIn or Facebook post in bad taste can negatively brand an individual as potentially undesirable (Greysen, Kind, & Chretien, 2010). Many people become uninhibited online forgetting that others can see what they post (AMA Council on Ethical and Judicial Affairs, n.d.). Acting in a thoughtful manner is often assumed to be common sense, but social media how-to guides usually include advice such as "Assume everyone can see everything" or "Do not badmouth your job, your colleagues, your boss, your company or your clients", because of the mental disconnect between online and offline behavior (George Washington University Law School Career Development Office, n.d.). One popular solution is for individuals to have both public and private accounts for social media websites, thus separating their personal and professional presence online (AMA Council on Ethical and Judicial Affairs, n.d.: George Washington University Law School Career Development Office, n.d.). An alternative solution is to allow only ones professional presence to show online (George Washington University Law School Career Development Office, n.d.). Individuals can choose to participate somewhat anonymously online through the use of alternate screen names and privacy setting. However, this lack of obvious participation may harm job candidates who are not able to demonstrate their social media expertise when in search of employment (George Washington University Law School Career Development Office, n.d.).

Professional Behavior and Personal Presentation

Professional behavior and personal presentation are two separate, but interconnected, types of professional protocols. Professional behavior can be viewed as how an individual interacts with the people around them. Personal presentation is defined here as the appearance, perceived affect, and manner in which an individual moves. Acting responsibly and demonstrating respect for others increases professionalism through positive professional behavior (Phelps, 2006; Fook, Ryan, & Hawkins, 2000; Webster & Jones, 2009). Focusing on improving a situation or helping another person demonstrates respect for their concerns (Phelps, 2006). Actively listening to others concerns without judgment is one way to demonstrate respect (Fook, Ryan & Hawkins, 2000). These values are integrated in a Code of Professionalism developed by an obstetrics service line as "integrity, compassion, respect, excellence" (DuPree, Anderson, McEvory, Brodman, 2011). Perceived affect, or how others read an individual's body language can escalate or calm a situation (Fook, Ryan, & Hawkins, 2000). How individuals interact and present themselves is also a political skill. Harris, Harvey and Booth identify political skills, as a key trait in maintaining good working relationships (2010). Harris, Harvey and Booth demonstrate that the ability to see others' points of view and present oneself in a positive manner reduces the chances that an individual will engage in coworker abuse (2010). Coworker abuse is direct or indirect aggression toward a fellow employee of similar seniority (Harris, Harvey, & Booth, 2010). Examples of coworker abuse include: neglecting to pass on pertinent information, physical or verbal abuse and taking credit for someone else's work (Harris, Harvey, & Booth, 2010). Reducing coworker abuse would reduce negative conflict in the workplace and contribute to creating a positive work environment. Positive work environments not only have influence employee retention, but outside recruitment success due to the sharing of information between colleagues at different institutions (Dinger, Thatcher, Stepina, & Craig, 2012). The need to be seen as respectful, dependable, and focused on the needs of others, resonates throughout the literature (American Dental Education Association, 2009;American Society of Military Comptrollers, 2012; DuPree, Anderson, McEvory, Brodman, 2011; Harris, Harvey, Booth, 2010; Phelps, 2006; Oregon State Bar, 2011; Cardillo, 2009; Polk-Lepson Research Group, 2009).

Perceived affect, how others view an individual, may not initially seem relevant to their ability to do their job. However, Casciaro and Lobo suggest that negative perceptions of an individual can cause people to choose other less competent people as partners for projects because they have a more positive affect, (2008). Casciaro and Lobo indicate that when all possible partners are perceived in a positive manner competence is a stronger criterion for choosing a partner (2008). This research suggests that those who are perceived negatively will have less chance for advancement due to being less likely to be chosen as a partner when others are working on projects which may advance their careers (Casciaro & Lobo, 2008). This bias can be harmful for the organization which could have benefited from the individuals expertise on projects. The development of a positive perceived affect is critical for future leaders (Webster & Jones, 2009).

Increasing employees' positive perceived effect can be accomplished by developing professional characteristics and minimizing unprofessional characteristics. The Polk-Lepson Research Group identified "appearance" and "self-confidence and self-awareness" as two of the top five characteristics of professional employees (2009, p. 9). "Appearance", "poor work ethic", "poor attitude" and "having a sense of entitlement" were four of the six most unprofessional characteristics identified in their study (2009, p. 10). The section of the Kogod School of Business *Student Professionalism Expectations and Recruiting Policies* devoted to proper attire emphasizes the importance of appearance (2012).

The emphasis on appearance and perception of others makes it key that those seeking to be leaders dress and are seen to act in a professional and respectful manner. Projecting a positive affect may seem disingenuous; however, not doing so potentially minimizes an individual's potential costing both them and their employer (Casciaro & Lobo, 2008). Organizations can define their expectations for both dress and behavior in order to help guide individuals in their quest for professionalism and advancement.

Space: How Individuals Occupy Personal and Shared Areas

How individuals occupy personal and shared spaces affects others perceptions of them. For the purposes of this discussion personal space is the space between people that an individual needs to feel comfortable and their unshared work area; shared space is public spaces or shared work areas. Location, culture, gender, health and group dynamics also determine acceptable forms of occupying space (Cochran, Hale & Hissam, 1984; Eaton & Snook-Hill, 1997; Huckauf, 2007; Ozdemir, 2008; Novelli, Drury & Reicher, 2010; Powell, 2010). Images of large cities show people stand closely, while photographs of small cities and rural areas show larger open spaces between people. The number of people in a group, expectations of close contact with others or lack thereof, varies the amount of personal space needed for individuals to feel comfortable (Huckauf, 2007; Novelli, Drury & Reicher, 2010). Cultural norms are especially important to be aware of if there are a high number of international employees or users. Concepts of personal space are the most different when interacting between contact and noncontact cultures, but should always be respected (Mazur, 1977). Health issues can make it difficult to see the space around an individual causing others to unfairly judge them as being inconsiderate without taking into account their physical limitations (Eaton & Snook-Hill, 1997). The amount and type of space in individuals can move also determines personal space requirements (Cochran, Hale & Hissam, 1984). Of note, less personal space is needed in open spaces, than indoors (Cochran, Hale, Hissam, 1984). In public spaces males prefer more personal space when speaking with other males and less when speaking with females (Ozdemir, 2008).

Individuals, who feel crowded, without enough personal or work space, have demonstrated a significant drop in complex task performance (Sinha & Sinha, 1991). While these individuals show no drop in ability to complete simple tasks (Sinha & Sinha, 1991). These finding lend credence to the argument that respecting individual spatial boundaries, and work spaces, is necessary to higher performance levels. Perceived invasion of personal space can cause a significant amount of stress to an employee or patron (Cavallin & Houston, 1980). A culture respecting personal space is more likely to have high performance levels and less stress, increasing job satisfaction and political awareness.

Understanding the preferences and cultures of the organization and those served by it increases an individual's political and personal awareness, a key trait for leaders (Webster & Jones, 2009).

The Link Between Professionalism and Student Satisfaction

Zineldin, Akdag and Belal identified ten critical components of student satisfaction in Egypt and Turkey. Four of these critical components are relevant to professional protocols in academic libraries: “lecturer’s commitment”, “responsiveness of the professors to your needs and questions”, “politeness of the professors” and “politeness of the assistants” (Zineldin, Akdag, Belal, 2012). Commitment and responsiveness can be measured by the attitude and willingness of librarians and staff when helping students. The emphasis on politeness indicates the importance of observing social niceties when interacting with others, discussed above as perceived affect. Intimidating behaviors are not only rude and unprofessional but increase errors made while giving those on the receiving end a negative impression of an institution's culture (DuPree, Anderson, McEvory, Brodman, 2011). Developing protocols on how to hand off users to other librarians and staff would decrease the perception that the person being referred was an inconvenience to the referrer (Humphrey, Smith, Reddy, Scott, Madara, Arora, 2007; Cardillo, 2009). How someone is helped, the tone of voice, the expression on one's face, can be just as important as providing the assistance requested (Zineldin, Akdag, Belal, 2012). Explaining why a person needs to be referred can inform patrons and potentially minimize or eliminate their perception that the referrer does not wish to help them. As libraries are increasingly under pressure to demonstrate their relevance and prove their worth user studies have become increasingly popular. Zineldin, Akdag and Belal's research demonstrates that increased professionalism through polite, sincere, responsiveness is one way to increase student satisfaction with their library at no cost (2012).

Study Methodology

Procedure

To view the survey instrument please see Appendix A. An eight-question survey was developed for participants to answer online through SurveyMonkey to ensure confidentiality. The survey was open for respondents to complete two months from date of invitation. The online survey method was selected for the following reasons: because it ensured anonymity; could be completed at respondents' convenience during the two month period; had potential to be responded to relatively quickly; and was easier to gather the information using an online instrument.

The survey consisted of eight questions. Seven of the questions were multiple choice selection, and one question used a five point Likert-style scale (ranging from Completely Unimportant to Very Important) with four parts.

Participants

Participants were solicited from several different listservs managed by the Association of Research Libraries (ARL) Diversity and Leadership program with a total membership of 373. Members of the listservs are past program participants from ARL programs such as the Leadership and Career Development Program, the Initiative to Recruit a Diverse Workforce, and the Career Enhancement Program.

Results

A total of 64 individuals responded to the eight-question survey from the invitations sent out to the various listservs. 96% of survey respondents felt that "Librarianship" is a profession and 3% indicated they did not feel it was a profession. Of those respondents who felt “Librarianship” was a profession, 63% also believe those who work in libraries are “professional” while 17% were “neutral” and 8% felt they were “very professional”.

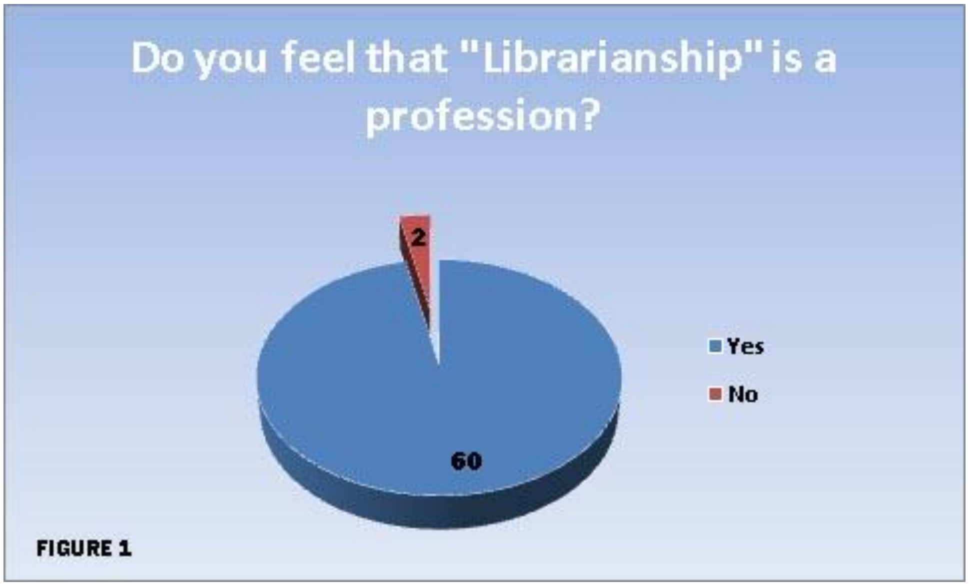


FIGURE 1

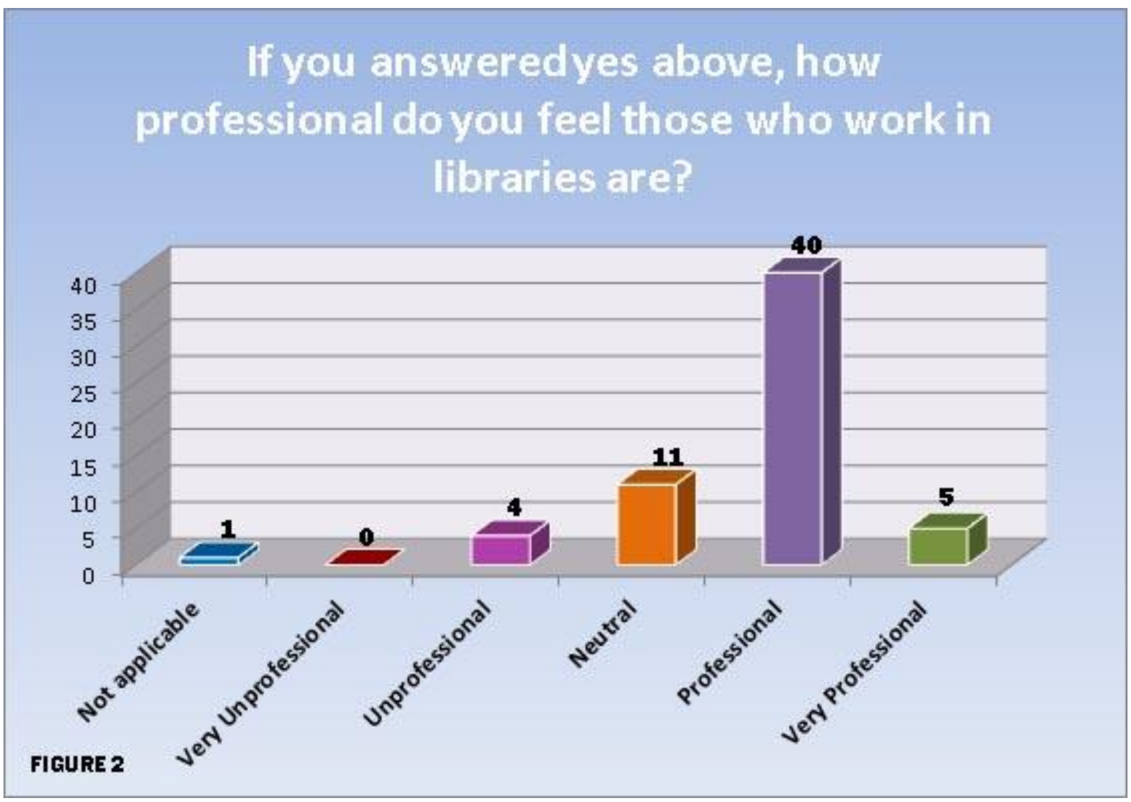
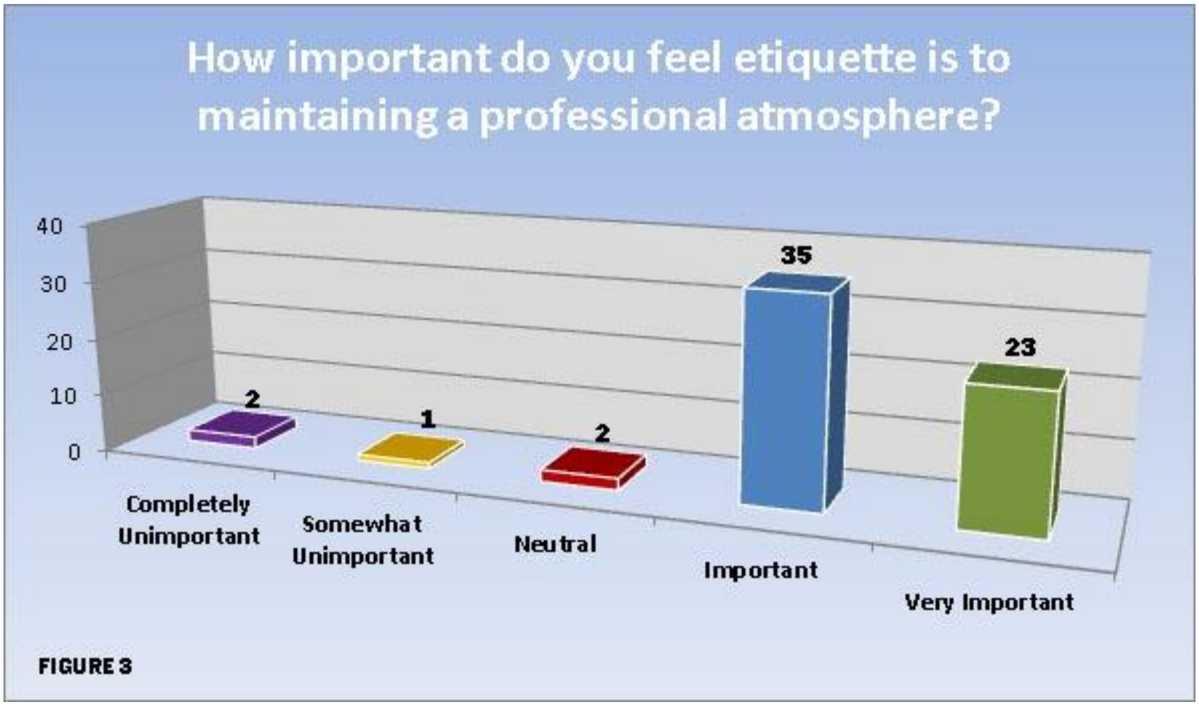
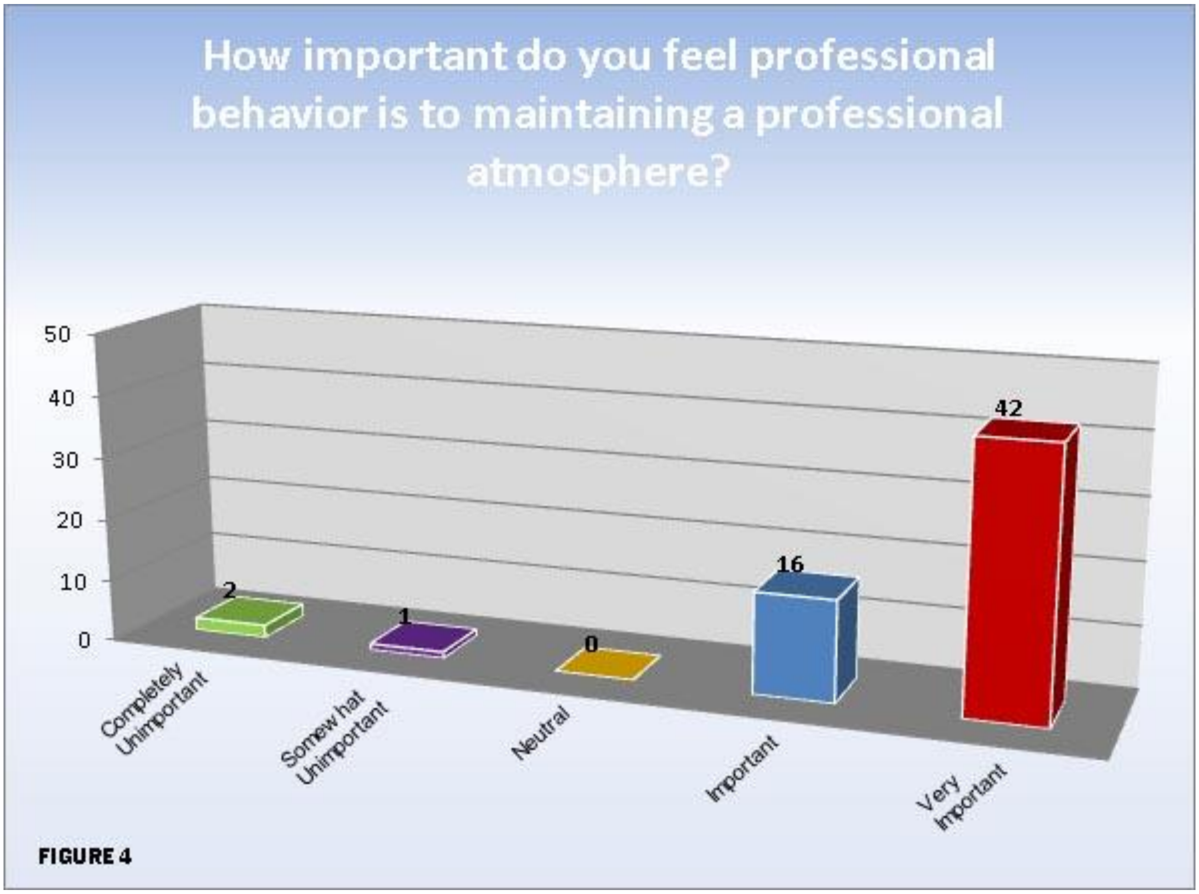


FIGURE 2

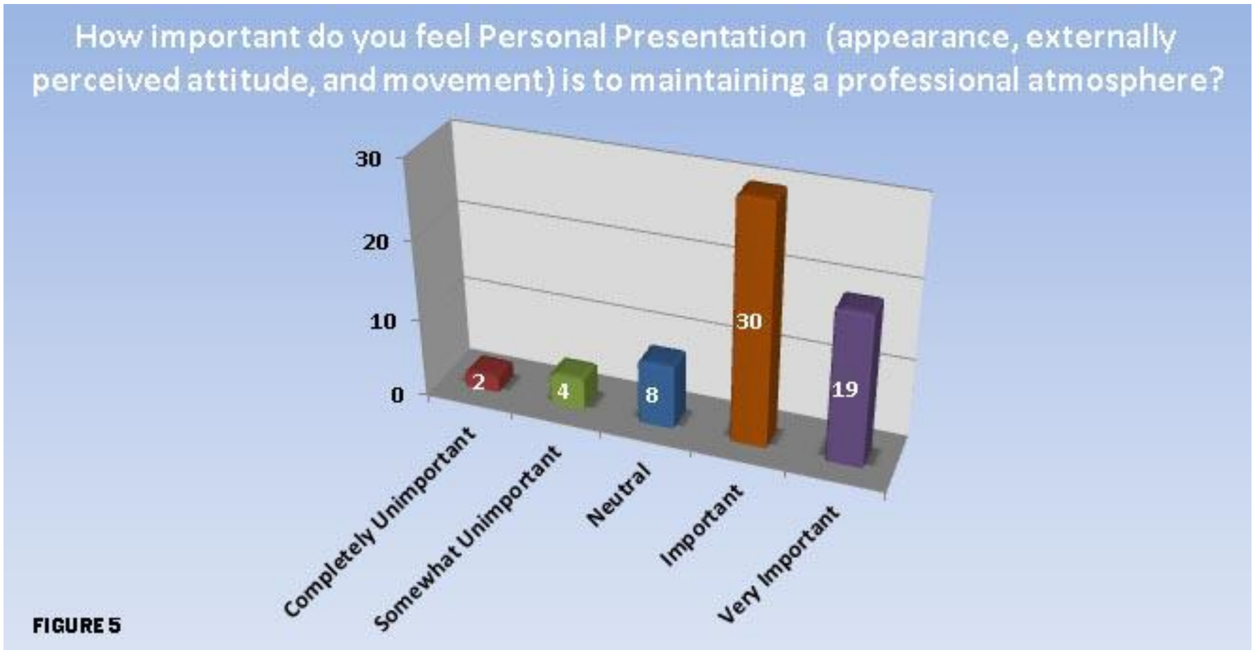
55% of respondents also felt Etiquette was “important” to maintaining a professional atmosphere while 36% felt it was “very important”. In contrast, only 3% felt it was “completely unimportant”.



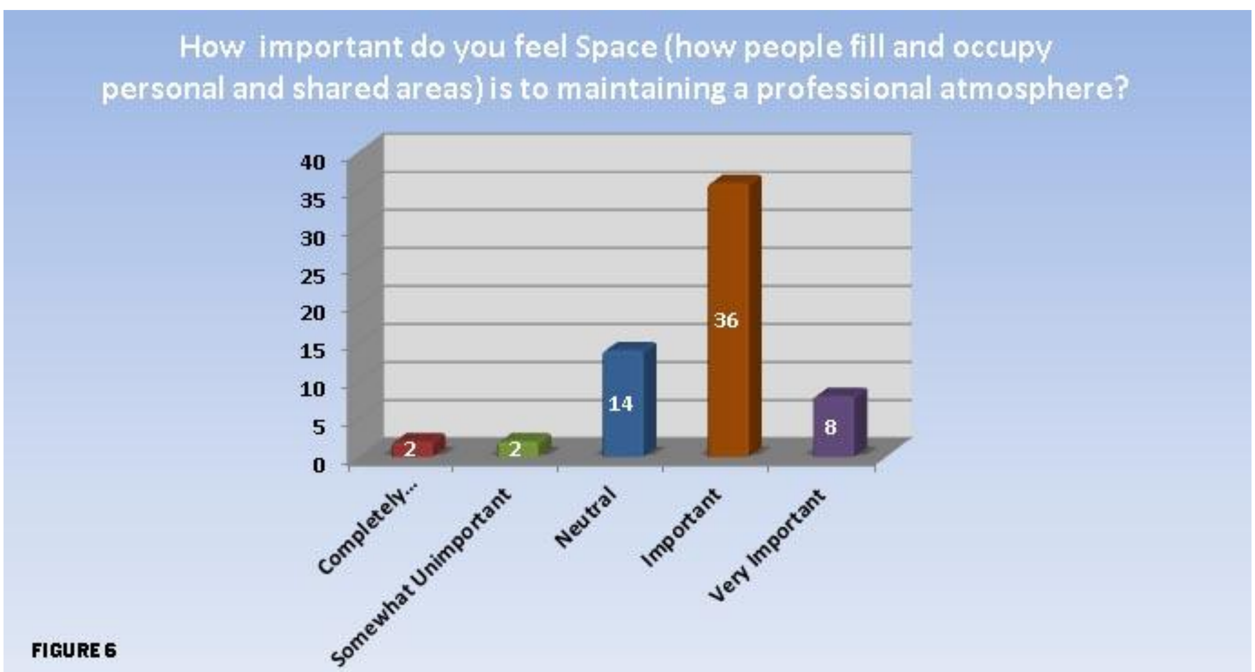
Responding to a question focusing on how important Professional Behavior is to maintaining a professional atmosphere, 66% responded it was “very important” and 25% responded it was “important”.



The importance of Personal Presentation such as appearance, externally perceived attitude, and movement was seen as "important" by 47% and "very important" by 30%.



How people fill and occupy both personal and shared areas in terms of Space and maintaining a professional atmosphere were seen as “important” by 56% of respondents while 22% were “neutral” and 13% felt it was “very important”.



Of the four categories including Etiquette, Professional Behavior, Personal Presentation, and Space -- 80% of the respondents said Professional Behavior was considered the most important.

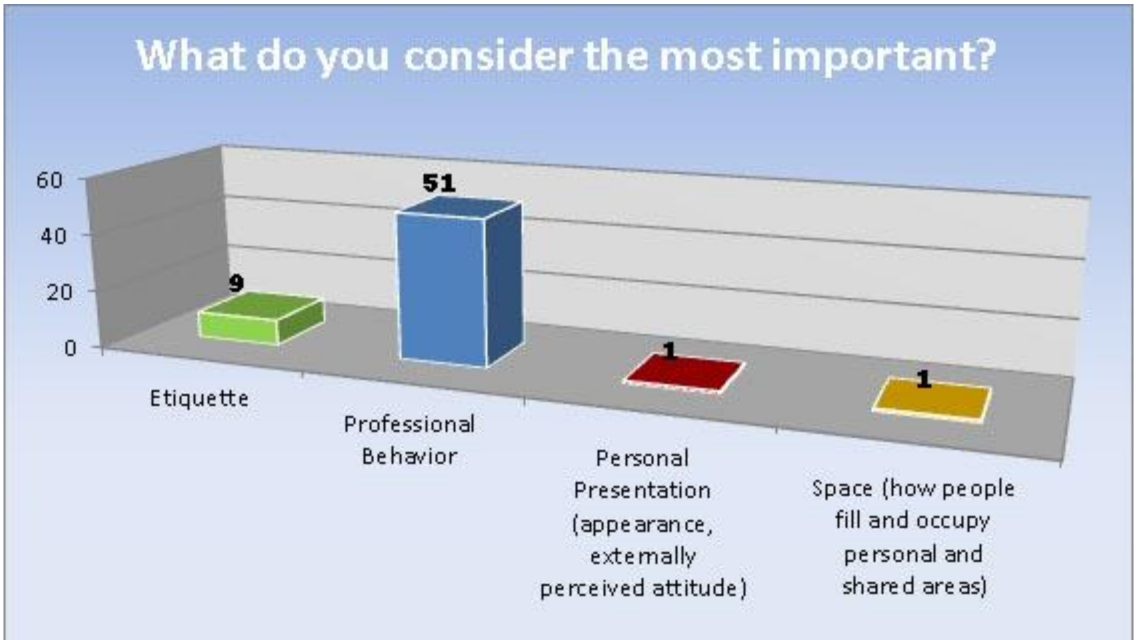


FIGURE 7

Demographics for the respondents showed that 60% currently work at either a college or university library, and 32% are ARL Institutions. 39% currently reside in the Midwest, 20% in the Northeast, 17% in the Southeast, 13% in the West, and 8% in the Southwest. The researchers conducted two tests, Chi-Square test and Fisher's Exact Test with respect to the questions (except Question 1 and Question 4) asked in comparison to demographics of work history and region. Region in relation to Question 2 and Question 5 were the only ones that resulted in significant and that the interpretation is the distribution of the responses of region in terms of the two questions do not appear to be the same across all 5 regions. The Midwest region differed significantly from the other regions for both questions. While the results suggest a significance, the sample sized used was too small to determine statistical significance.

Two age brackets had identical number of respondents, the 26-30 and 31-40 age brackets both had 27% while the 41-50 age bracket followed with 22%, and 11% for the 25 and under age bracket, and slightly less for 51-60 age bracket with seven percent. The 61 and over age bracket had the smallest representation with only two percent. The majority of survey respondents, 80%, were at the time of the survey, working as librarians. In contrast, only nine percent of respondents were working as Support Staff and eight percent worked as Administration. Previous work history was described as one or more careers in a setting other than a library for nearly 62% of respondents while 38% were students who went straight to library employment from high school, college or graduate school.

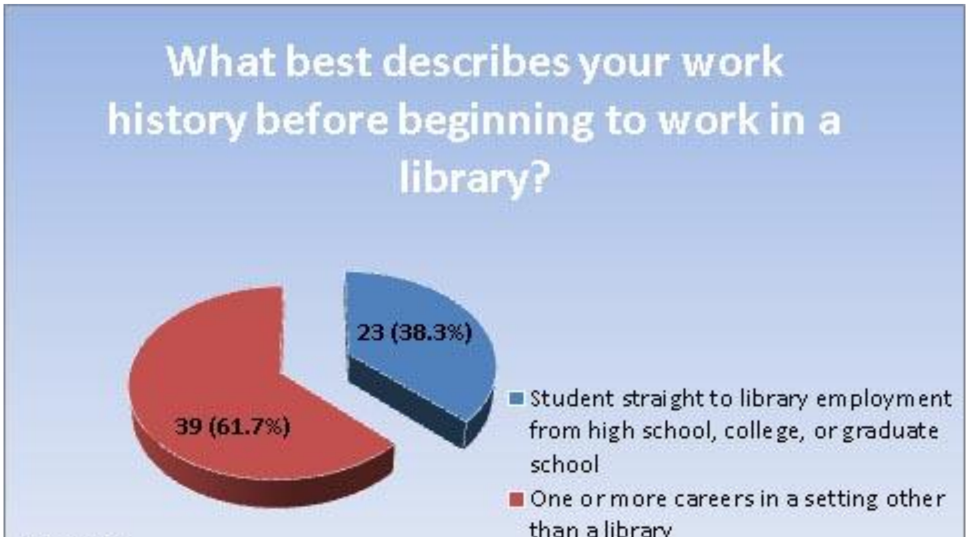


FIGURE 12

Solutions and Recommendations

Defining of professionalism as a behavior, and not dependent on ever changing tasks, provides libraries with the flexibility to grow as their role in society changes (Noordegraaf, 2007). DeWeese's 1970s research on academic librarians, with thirty-nine participants, indicated that increases in age, perceived ability to find alternative work, and marriage correlated with less concern about the status of the profession as viewed by those outside the library (1972).

When looking to create a more professional environment people prefer to engage in activities relevant to their jobs that positively reinforce professional behavior, not being lectured (Humphrey, Smith, Reddy, Scott, Madara, Arora, 2007; Polk-Lepson Research Group, 2009). In order to offer job relevant activities different departments within the same organization may choose to create their own series of workshops. By presenting a series of case studies focused on potential job situations employees would be able to interact with each other and come to an agreement about what would be the most professional way in which to handle a given situation. Assessing case studies provides a low-risk environment in which individuals can gain contextual experience (Fook, Ryan, & Hawkins; 2000). Once the group has established what is and is not considered a professional response to a situation it is important that all members of the group should be held to the same standard of professionalism regardless of rank or title (DuPree, Anderson, McEvory, Brodman, 2011). Having the same standards for librarians and staff is part of creating an equitable and positive working environment that will retain employees during changes in leadership and create an environment that will attract the best candidates. At the same time libraries should be cautious of creating a strict list of rules that must be adhered to that may not be flexible enough to address every situation, and which may inhibit creative solutions to complex problems (Fook, Ryan, & Hawkins, 2000; Rossiter, 1995). Alternatively, library employees could use the critical incident technique as a learning tool in a personal development or workshop setting (Fook, Ryan, & Hawkins, 2000).

In broad process terms, the use of critical incidents in educating professionals, as we have developed in our practice involves:

- the identification of an incident from the student's experience which was critical to the student...
- a detailed description of that incident...
- a subsequent analysis of that incident...

From our experience, the choice of incident, and the way in which the description and analysis is conducted will vary according to the following:

- the purpose of the learning...
- the setting...

(2000, p. 226-229).

Websites such as GlassDoor.com and LinkedIn.com demonstrate the interconnectivity of previous, current, and potential employees, and the desire of people to know about an institution and its culture before accepting a job offer, or in some cases before applying for a job. As one interviewee of Fook, Ryan and Hawkins notes, identification with an institution makes job candidates feel that "I was in the right place" (2000, p. 125). Establishing professional protocols would enable libraries to more concisely articulate their values. These values could then be used as part of internal leadership training, and as selection criteria in the succession planning process.

Discuss future and emerging trends. Provide insight about the future of the book's theme from the perspective of the chapter focus. Viability of a paradigm, model, implementation issues of proposed programs, etc., may be included in this section. If appropriate, suggest future research opportunities within the domain of the topic. Future research should include a larger sample size to confirm validity.

CONCLUSION

Looking beyond the needs of a single organization, to the needs of librarianship, it is clear that maintaining professional protocols, are an important aspect of succession planning. Professional protocols can be included in the competencies defined by an organization's succession plan increasing retention, and benefiting librarianship as a whole (Dinger, Thatcher, Stepina, & Craig, 2012; Rothwell, 2005; Singer & Griffith, 2010).

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Key Terms & Definitions

Etiquette: The unwritten rules of polite behavior in society or a specific workplace.

Professional behavior: How individuals interact with each other.

Personal presentation: The appearance, perceived affect, and how individuals move.

Professionalism: Obeys the unwritten rules of society, interacts in an emotionally aware manner, presents themselves physically, and occupies the space around them.

Appendix A.

Survey Instrument: Librarianship Professional Protocol Survey

Do you feel that "Librarianship" is a profession?
__ Yes
__ No

If you answered yes above, how professional do you feel those who work in libraries are?
__ Not applicable. I do not feel "Librarianship" is a profession
__ Very Unprofessional
__ Unprofessional
__ Neutral
__ Professional
__ Very Professional

Please use the scale from Completely Unimportant to Very Important to rank the following questions.

	Completely Unimportant	Somewhat Unimportant	Neutral	Important	Very Important
How important do you feel etiquette is to maintaining a professional atmosphere?	___	___	___	___	___
How important do you feel professional behavior is to maintaining a professional atmosphere?	___	___	___	___	___
How important do you feel Personal Presentation (appearance, externally perceived attitude, and movement) is to maintaining a professional atmosphere?	___	___	___	___	___
How important do you feel Space (how people fill and occupy personal and shared areas) is to maintaining a professional atmosphere?	___	___	___	___	___

What do you consider the most important?
__ Etiquette
__ Professional Behavior

__ Personal Presentation (appearance, externally perceived attitude, and movement)
__ Space (how people fill and occupy personal and shared areas)

Please select one answer for each of the following:

Describe your institution:
__ College __University __ARL Institution

Region you currently reside in:
__Northeast __Southeast __Midwest __West __Southwest

Indicate your age range:
__25 or less __26-30 __31-40 __41-50 __51-60 __60+

What best describes your work history before beginning to work in a library?
__ Student straight to library employment from high school, college, or graduate school
__ One or more careers in a setting other than a library

If you would consider participating in a brief follow-up phone interview, please contact:
Kiyomi Deards, kdeards2@unl.edu 402-472-2554
Jolie Graybill, jgraybill3@unl.edu 402-472-4547

APPENDIX TWO
Scholarly and Creative Activities
Publications

Brief Description:

- **Graybill, J.O.**, Carpenter, M., Offord, J., Piorun, M., & Shaffer, G. (2013). Employee onboarding: Identification of best practices in ACRL libraries. *Library Management*, *34*(3).
REFEREED
- **Graybill, J. O.**, & Bicknell-Holmes, T. (2013). Location, location, location: impact of IM widget placement. *College and Undergraduate Libraries, Summer.*
REFEREED

My Role:

For these two research articles, I participated as a team member assuming responsibility for particular identified segments of the research process and subsequent writing as well as establishing and adhering to deadlines. In addition, I assumed statistical responsibilities for the "Location, Location, Location" project, and then spearheaded leadership of the submission process for both articles in their respective journals. Both articles were originally accepted for publication in the Fall of 2011 and Winter 2012 respectively, however, due to unforeseen issues both publications were delayed until 2013.

Significance/Impact:

Employee Onboarding: identification of best practices in ACRL libraries examines ACRL libraries and how the concept of onboarding (the second of four phases of the employee life cycle) of new employees in ACRL institutions transpires or doesn't transpire. Seventeen institutions shared information on what is done in the respective institution for new employees, and a set of best practices was identified.

**** PLEASE SEE ACTUAL JOURNAL FOR ARTICLE – MARKED WITH FLAGS****

Location, Location, Location: the impact of IM widget placement examines the implementation of Chat Reference at UNL Libraries and the effects of placement of the widget itself, specifically piloting strategic placement of the QuestionPoint Instant Message Qwidget on multiple pages of the library website – this resulted in drastic increase in reference interactions and this article documents how and what was done, as well as the statistical results.

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Employee onboarding: identification of best practices in ACRL libraries

Jolie O. Graybill
DISC, University of Nebraska-Lincoln Libraries, Lincoln, Nebraska, USA
Maria Taesil Hudson Carpenter
Somerville Public Libraries, Somerville, Massachusetts, USA
Jerome Offord Jr
Library Services, Lincoln University, Jefferson City, Missouri, USA
Mary Piorun
Lamar Soutter Library, University of Massachusetts Medical School, Worcester, Massachusetts, USA, and
Gary Shaffer
Tulsa City-County Library, Tulsa, Oklahoma, USA

Abstract

Purpose – The purpose of this paper is to identify best practices of employee onboarding, the process by which a new employee is introduced to an organization and its vision, mission, and values.

Design/methodology/approach – Researchers requested that members of the Personnel Administrators and Staff Development Officers Discussion Group of the Association of College and Research Libraries (ACRL) share documents related to employee onboarding and three researchers independently reviewed the documents. The collected documents were compared to the socialization model proposed by Raymond Noe, including the detailed aspects of the organizational phase and the key components identified in the best practices literature.

Findings – In total, 17 institutions submitted documentation for review. All institutions discussed at least one or more of the key areas identified in the socialization process. Every institution in the study included a discussion of job expectations and evaluation criteria (100 percent); ten (59 percent) discuss mission, vision, and values; however, topics such as culture (five or 29 percent) and politics (one or 6 percent) were infrequently covered. Onboarding programs varied in length (one week to more than six months). Check lists were the most common tool used to manage the onboarding process. Other notable topics covered include dealing with change, understanding the team-based environment, diversity, library awards and library fundraising.

Research limitations/implications – Because of the limited number of documents examined in this study, the research results may lack generalisability. Therefore, researchers are encouraged to test the proposed propositions further.

Practical implications – Moving from a traditional new employee orientation model to a best-practices onboarding model will require HR professionals to conduct an internal assessment of the current program.

Originality/value – Due to the high cost associated with recruiting new employees, the need for new employees to be fully functional and engaged as soon as possible, and the need to communicate performance indicators, the need to share best practices is important.

Keywords Libraries, Recruitment, Human resource management, Socialization, Onboarding, New employees, Best practices, Hiring practices

Paper type Research paper

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> I was sent to a conference room where someone from HR helped me complete a bunch of forms. I was not introduced to anyone. I had no one to go to lunch with and no one had set up my computer access so I sat there and stared at the wall. By the end of the day I felt like I had made a terrible mistake in leaving my old job (Partnership for Public Service, 2009).

No manager wants to welcome a new employee to the organization with a round of Kafkaesque alienation. The question, then, is how to welcome and integrate new employees into the organization so that they may acclimate and contribute quickly. The paper to follow will discuss the technique of onboarding, present the results of a research study highlighting onboarding practices at the Association of College and Research Libraries (ACRL), and offer recommendations for best practices.

Employee onboarding, also referred to as assimilation or organizational entry and socialization, is the process by which a new employee is introduced to an organization and its vision, mission, and values (Fyock, 2009). Regardless of whether the employee is an internal or external candidate, it is "the process of acquiring, accommodating, assimilating and accelerating new team members to the organization" (Bradt and Vonnegut, 2009). Onboarding begins when a new employee is offered a position and ends when the employee is considered fully functional. It covers an employee's first year, incorporates various offices and functions, addresses the whole range of employee needs (equipment, accounts, training, networking), and is strategic in focus. Employees actively participate in the onboarding process.

Onboarding is not to be confused with orientation or mentoring programs or their components. New employee orientation is often a discrete, stand-alone event, conducted by a human resources (HR) representative. Unlike onboarding, orientation is focused on transactional tasks such as filling out benefits forms or paperwork, and many companies shared this view of getting new employees started even in the early 2000s (Stein and Christiansen, 2010). An orientation provides the new employee with basic information about the organization (Partnership for Public Service, 2009). Mentors are those who help another person through an important transition such as a new job or a major change in job responsibility, as well as career development and personal growth (McKimm *et al.*, 2007).

Why onboarding is important

Onboarding is the second phase of the employee life cycle, and has four identified parts:

(1) forecasting and finding talent;

(2) onboarding;

(3) managing talent; and

(4) transitioning (Partnership for Public Service, 2009).

Onboarding is critical for a number of reasons. First, large amounts of time and money are invested in searching for and recruiting new employees; therefore, organizations cannot afford to disenfranchise a new hire at the beginning of his or her tenure. Second, onboarding assists organizations in ensuring that new employees are up and functioning as soon as possible. Third, if the onboarding process is implemented properly, it will enhance new employees' transitions into the organization and help them become more engaged (Workforce Management, 2009a). According to the Society for Human Resource Management (SHRM), studies indicate that employee engagement is partially influenced by the new employee's handling of the job during the first 30-90 days of employment (Fyock, 2009). Finally, a comprehensive onboarding program, including communicating performance indicators, an assessment of strengths and weaknesses, and providing feedback, training, and network opportunities, can increase employee performance by 11.3 percent (Lavigna, 2009).

Trends in the current business economy indicate some new and harsh realities such as employees being no longer loyal to one employer and expecting to find employers willing to build their skills and experience and pressure on managers to have new employees working at 100 percent much sooner (Sims, 2011). Coupled with downsizing, an unsure economy, and competition to secure the most talented employees, companies now design and implement creative onboarding programs tailored to their specific needs (Sims, 2011).

Goals of onboarding

No two onboarding programs are identical; programs are tailored to an organization's unique environment and the level and position of the new employee (Edwards, 2009; Fyock, 2009). However, there are underlying goals of onboarding programs that are common including creating an inviting and positive experience for the new employee. Similar to creating an image of what it would be like to work for an organization during the recruiting stage, in the onboarding stage, the organization needs to deliver on that image to ensure it mirrors the environment in which the employee wants to work. Onboarding is also the time to emphasize the importance of clear and concise communication, identify the preferred and acceptable methods of communication, and lay the groundwork for ongoing communication. There is a plethora of information to be communicated to an employee in the first year. It should be given in small doses that allow for the employee to internalize and apply to his or her work assignments (Workforce Management, 2009a). The overarching goal of all onboarding programs is to align the new employee with key business strategies and communicate how the new hire will contribute to the overall mission and vision of the organization (Workforce Management, 2009a). This can be done by setting individual milestones for the new employee to work toward during that first year of employment and even before the employee actually starts his/her first day; a recent Society for Human Resource Management (2011) survey shows that up to 17 percent of organizations are starting networking and relationship establishment prior to start date (*HR Specialist*, 2011).

Evaluation

Many employees are on probation during the onboarding period and are formally evaluated at set intervals. An effective onboarding program should give new employees the tools and support needed to succeed, and identify new hires that are not a good fit for the organization (Partnership for Public Service, 2009). In addition to the individual's performance, it is also important for organizations to evaluate how effective the onboarding program has been to determine impact and areas for improvement. The evaluation can be both operational and strategic (Partnership for Public Service, 2009). Common measures include (Fyock, 2009):

- turnover and retention rates for groups of new hires (e.g. those hired in 2012);
- retention threshold (e.g. percentage of employees leaving in the first six months or within two years);

- performance indicators (the performance differential between employees who participated in different onboarding programs, e.g. mentoring); and
- informal and formal feedback (e.g. the use of focus groups, interviews, one-on-one conversations to ask employees about their onboarding experience).

By evaluating and making adjustments to both individual performance and the onboarding process itself, organizations can continually improve getting new employees up to speed, retention rates, job satisfaction levels, and performance results.

Current trends in onboarding

Many of the recent trends in onboarding stem from changes in technology and the entry of millennials, born in or after 1982 (Howe and Strauss, 2000), into professional positions. Millennials "generally are technically savvy, eager to learn and advance, and expect respect from supervisors and co-workers" (Stimpson, 2009, p. 19). Today, many of the routine transactional tasks previously associated with orientation can be handled electronically through a web-based portal, often before the employees first day of work. These include instructions such as how to complete benefit forms, parking information, and how to request computer accounts. Additional items can include the organization's history and profile, a welcome message from the Chief Executive Officer, employee profiles, policies, procedures, online tours, and videos (Fyock, 2009). Onboarding portals are able to track and monitor employees as they move through the onboarding experience by creating check-sheets that can be viewed by his or her supervisor. In addition, the increased use of the web has allowed for the reduction of data entry for human resources staff and makes a small contribution to a paperless work environment (Wright, 2008).

To help accelerate socialization, organizations are utilizing Web 2.0 technologies such as Facebook or LinkedIn to allow new employees to create a network of colleagues before they start working (Edwards, 2009). After the start date, the employer arranges activities for new hires to learn team-building skills and partnerships (Stimpson, 2009). Additionally, formal mentoring programs are widely used as part of onboarding programs (Workforce Management, 2009b; Fyock, 2009; Oud, 2008) and the use of a "buddy" is emerging as well. According to Bradt, mentors are good but sometimes buddies are even better (Bradt and Vonnegut, 2009). A buddy is similar to an official friend: someone whom a new hire can ask questions that he or she may not want to ask of a new supervisor, from the trivial, such as where the bathroom or where to eat lunch, to more politically sensitive questions, such as what is the best way to get an answer from a particular colleague. Questions that relate to the overall culture of the organization may also be answered by a buddy, such as who holds power and who are "sacred cows". The buddy relationship differs from a mentoring relationship in that a buddy is there to help the new hire become socialized (Nelson and Sperl, 2004).

In order to implement any onboarding program, the organization's current employees must buy in and accept ownership by way of participation. According to Bradt (2010, p. 5), "If I could wave my magic wand, no one would ever let anyone start recruiting anyone ever until key stakeholders were aligned around all aspects of a cohesive Total Onboarding Plan". Overall, Bradt (2010, p. 4) believes that onboarding "is two-way transformational leadership as organizations transform new employees while new employees are transforming the organizations they are joining". Successful onboarding happens when both the hiring managers and current employees, along with the new employees, take leadership roles in a combined effort heading towards the same goal (Bradt, 2010).

Identification of best practices

Best practices are defined by Jan Duffy as "processes that represent the most effective way of achieving a specific objective" (Skyrme, 2001). A tension with the notion of best practices is that many service organizations consider themselves to be different or unique and thus have unique challenges. As stated above, it is important for onboarding programs to be tailored to the organization. So, how can best practices be developed for onboarding? Skyrme (2001) suggests that techniques and practices that are widely used by practitioners should be recorded, paying close attention to tasks that are referred to as "interesting". He also suggests that examples should be noted where practices are more frequently associated with positive results and that peers should be involved in the evaluation of the identified practices. The essence of identifying best practices is "transferring knowledge from those who know how to do something well to those who are keen to learn more" (Skyrme, 2001).

Onboarding in the library setting

The library literature has limited information regarding onboarding best practices. Authors thus far are using the term "orientation" and focused on either individual institutional practices (Ballard and Blessing, 2006; Wallace, 2009), the importance of orientation (Mossman, 2005), or topics to be covered in an orientation (DiMarco, 2005). Yessin (2004), using a question and answer format, produced an introduction to law libraries that can be shared with new employees without law library experience.

Oud (2008) surveyed new librarians working in Canada during 2003-2004 to learn about transitioning from library school into a professional position and found there was a moderate degree (29.82 on a scale of 0 to 45) of difference between what the new hire expected and what he or she experienced. Librarians liked the flexibility and variety in their daily work but were surprised by the organizational culture (surrounded by unmotivated or negative employees, presence of workplace politics, lack of teamwork or feelings of isolation, or a heavy emphasis on high work volume). Oud (2008) raised awareness of the importance of addressing these issues during the employee's first year in order to improve job satisfaction and retention.

Identification of best practices in ACRL libraries

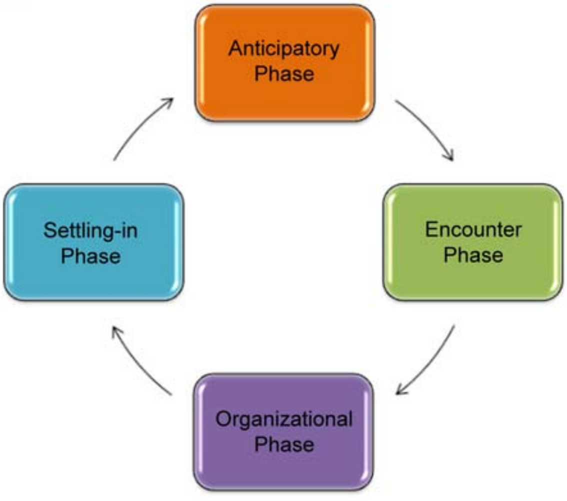
The Association of College and Research Libraries (ACRL) is a community of more than 12,000 academic and research librarians and libraries (American Library Association, 2011). These institutions have been faced with challenges similar to those found in the business and corporate setting in terms of recruiting and keeping talent. This association has an interest group dedicated to issues of personnel management and development (Personnel Administrators and Staff Development Officers Discussion Group). Members of this group were contacted via the group's discussion list and invited to share documents related to employee onboarding in order for the researchers to determine the following questions: what did all the institutions do and what worked best? Researchers received documents ranging from checklists, policies and procedures guidelines to links to websites and handbooks. In order to identify library onboarding best practices, the researchers utilized thematic content analysis, a process by which the coding scheme is based on categories designed to capture the dominant themes in a text (Lewis-Beck, 2004). This methodology has been used previously to identify best practices in libraries by Madden (2008) and Brown and Sen (2010). Three researchers working independently conducted the analysis of the materials for common themes contained in the documents. The key variables identified in the content analyses were:

- Socialization – communication prior to start date; explanation of position; training or shadowing; expectations and evaluation criteria; organizational history; culture; language; structure; mission, vision and values; politics; and people.
- Support programs – mentoring or buddy programs.
- Checklist – for managers, the employee, or the supervisor.
- Review of policies.
- Communication process – handbook, email, listserv, tour.
- Other noteworthy activities.

The collected documents were compared to the socialization model (Figure 1) including the detailed aspects of the organizational phase (Figure 2) and the key components identified in the best practices literature (see Appendix 1). Inter-coder reliability for the three researchers was 95 percent. For the remaining 5 percent, data and codings were analyzed and differences resolved through a process of negotiated normalization.

Socialization model

The anticipatory socialization phase supports the idea that onboarding begins in the recruitment and selection process. The "anticipatory socialization process helps



Source: Based on Noe *et al.* (2010)

Figure 1.
Socialization model

Source: Based on Chao *et al.* (1994)

Figure 2.
Components of the organizational phase and definitions

individuals develop expectations about the company, job, working conditions, and interpersonal relations" (Noe *et al.*, 2010, p. 334). This information is learned by prospective employees when interacting with library personnel involved in the recruiting and selection process. During the anticipatory phase, library staff is encouraged to provide a real-life overview of the organization, its challenges, and specific expectations of team members and job performance. After the anticipatory phase and when a candidate accepts the offer, they enter the encounter phase. The encounter phase begins when the new employee arrives on the first day. During the encounter phase, new employees are learning and observing the organization for the first time (often attempting to reconcile what they have heard about the organization versus what they are actually experiencing on day one).

The organizational phase – one of the most intense phases – involves several steps and provides new employees with key information about the organization. Critical components of this phase include history, organization/company goals, language, politics, people, and performance proficiencies. These components (Noe *et al.*, 2010) are identified in Figure 2.

According to Barbazatte (2007), the planning process is important because it reinforces the notion that the organization and the new employee made the right decision. The planning process helps to create an in-depth onboarding process. The planning process can manifest itself in various ways, such as in the form of an organizational checklist, printed orientation guides, or localized activities to aid in the acclimation process.

Findings

Socialization comparisons

Seventeen institutions responded to the call for documents. See Appendix 2 for a complete list of respondents (referred to as Institutions 1-17). All institutions discussed at least one or more of the key areas identified in the socialization process; see Appendix 3 for a summary of responses and Appendix 1 for detailed responses by institution. The one key area of socialization that all institutions (100 percent) cover is the discussion of job expectations and evaluation criteria. Looking at other areas of socialization, only four institutions (24 percent) communicate with new employees prior to starting the job, while seven (41 percent) discuss the organization's history. Five (29 percent) discuss culture, and ten (59 percent) discuss mission, vision, and values. Politics and understanding the organization's language are key parts of the socialization process, but only one institution (6 percent) discusses either politics or language with new employees. In comparison, 12 institutions (71 percent) discuss the job (with an explanation) and training with new employees. Four (24 percent) of the responding institutions have a "buddy" program compared to one institution (6 percent) with a mentoring program. For a full comparison of the socialization components, see Figure 3.

Program length and onboarding planning and follow-up

The length of formal onboarding programs varies by institution, as does the follow-up time periods for check in. As it relates to the length of the program, the shortest program length was in the range of one to 14 days for Institutions 1, 3, 12, and 17 (24 percent), compared to Institutions 9, 10, and 11 (18 percent) having a six-month program. Only one institution (6 percent), Institution 2, had a program that lasted one year.

As to the follow-up periods, Institutions 2, 4, and 11 (18 percent) have a 30-day follow-up period and of the aforementioned institutions, Institutions 2 and 11 (12 percent) also have a 60-day follow-up period (see Figure 4 for more comparative data).

Organizational planning

Organizations rely on tools to assist with facilitating the onboarding experience for new employees. The common tool is a checklist. The checklist evaluation focuses on three distinct staff members involved in the onboarding process:

(1) the manager;

(2) the supervisor; and

(3) the employee.

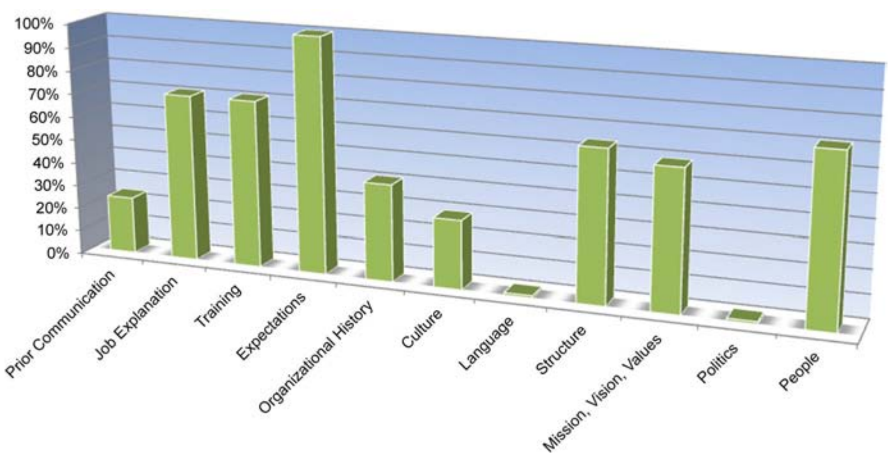


Figure 3.
Comparison of socialization components

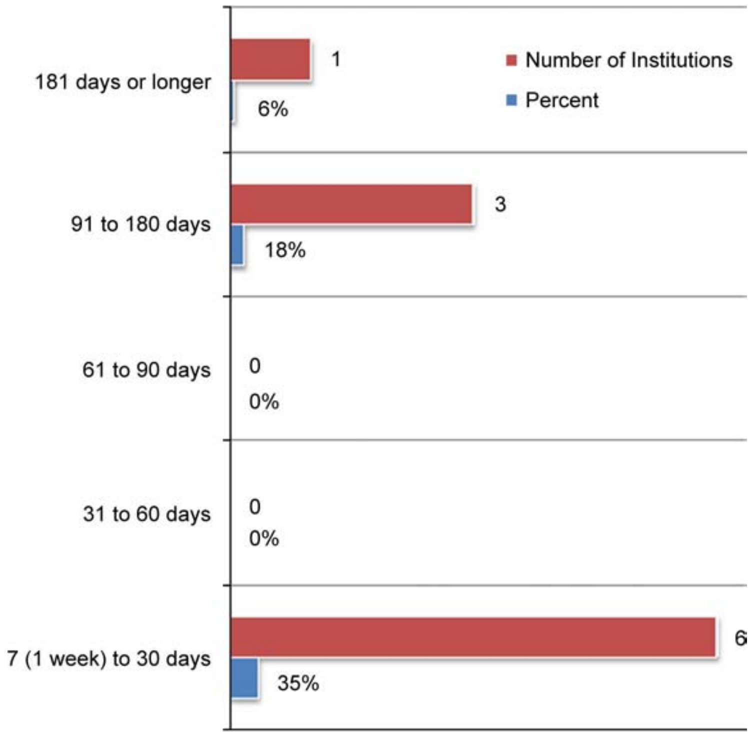


Figure 4.
Length of onboarding program

Of the 17 reporting institutions, only 12 (71 percent) utilize a planning tool during the onboarding process. Furthermore, of the 12 institutions reporting the usage of said planning tools, nine (53 percent) have a checklist for supervisors, five (29 percent) have a checklist for managers, and 2 (12 percent) have a checklist for the new employee. Therefore, the data shows that five (29 percent) of the 17 institutions do not use any checklist at all.

Review of policies

Each institution that responded discusses policies with new employees. Polices that are discussed and reviewed with new employees include the following:

- leave;
- attendance;
- non-discrimination;
- eating and drinking rules;
- phone etiquette; and
- safety and security.

One finding that stands out in this area is that 13 (76 percent) of the responding institutions discuss safety and security with new employees including disaster planning and evacuation procedures. Nine (53 percent) libraries discuss compensation and 12 (71 percent) discuss benefits at the library level.

The most frequent form of communication used during onboarding is e-mail (see Figure 5) with 12 institutions using e-mail (71 percent) compared to only one institution (6 percent) providing and/or reviewing frequently asked questions with new employees. The distribution of a printed handbook was more popular than the use of an online portal (see Figure 6).

Areas of communication

The areas of communication identified in the best practices literature include:

- portal (*e.g.* training and communication to new employees on how to use the institution's library portal);

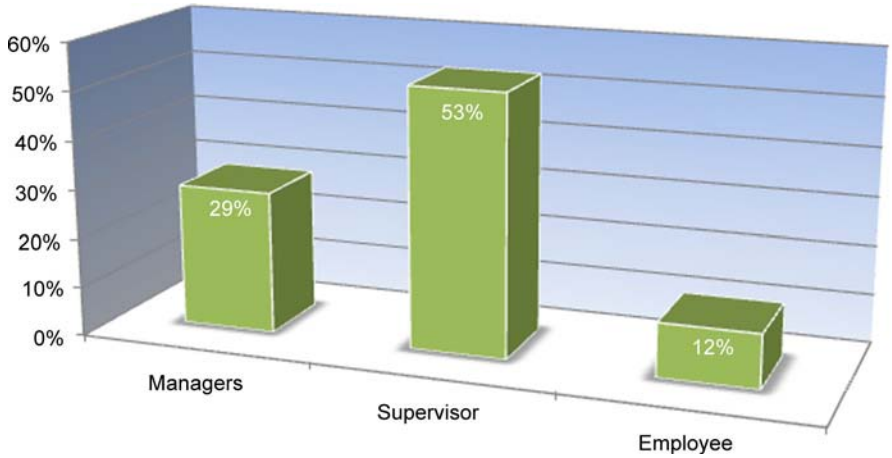


Figure 5.
Use of onboarding checklists

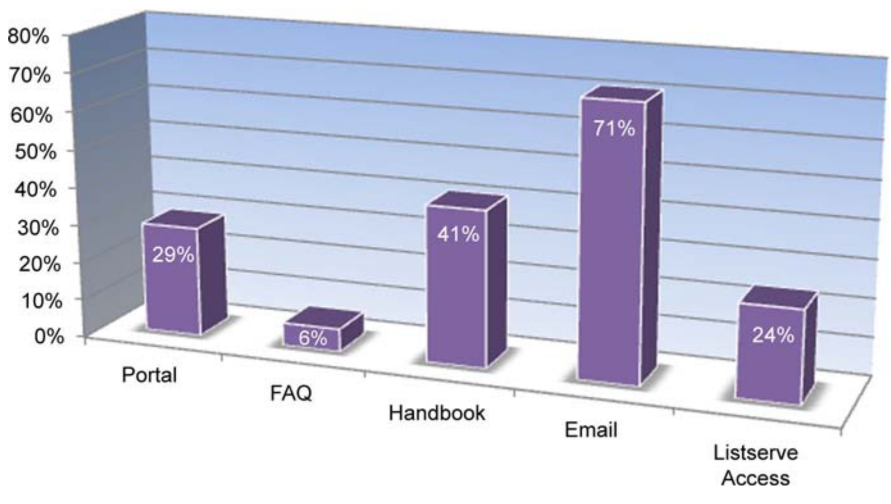


Figure 6.
Areas of communication

- frequently asked questions (e.g. providing staff with a list of frequently asked questions);
- handbook (e.g. supplying new staff with an employee handbook specific to the library);
- e-mail (e.g. providing training for institution email system or a guide for usage); and
- listserv access (e.g. introducing staff to library listservs and/or automatically subscribing the new staff members).

Of the 17 responding institutions, only seven (41 percent), provide new employees with an employee handbook compared to one (6 percent) institution that provides a list of frequently asked questions. Looking at electronic communication, e-mail, and electronic lists, 12 institutions (71 percent) provide training on the e-mail platform compared to four (24 percent) that provide immediate access to listservs.

Only one (6 percent) institution includes information on discussing communication styles with new employees. This institution asked the new employee which form of communication they preferred. They also included the area of preferred communication on the manager's checklist as a discussion item.

Unique activities

Libraries have augmented the onboarding process with unique activities that are specific to institutions' local environments (see Appendix 4). Notable discussion topics include dealing with change, the scholarly communication process, understanding the team-based environment, the information literacy curriculum, diversity, different types of employees, ergonomics, conflict of interest policies, records retention policies, library publications, library awards, library fundraising, and faculty and governance information. In addition to discussions, libraries engage in innovative activities to help with the socialization process including diversity bingo (see Appendix 4 – other noteworthy activities), welcome receptions, lunch with senior staff, introduction to consortia partners, and a gift bag for each new employee.

Discussion

When reviewing the documents, it became apparent that libraries are implementing various parts, or multiple components, of the key elements identified in the best practices literature. However, only two institutions are successful at implementing an onboarding program with virtually all practices present. In comparison, there are a number of institutions that are engaged in orientation programs; they do not include the socialization processes and related activities and tasks. As libraries continue to implement onboarding programs and enhance them to include creative activities, it is important to ensure that the socialization process is a key component of any onboarding program. The socialization process begins at the recruiting stage, can aid in the retention of new staff, should incorporate incremental evaluation points during the process, and should provide employees with an opportunity to ask questions and offer expertise. If onboarding is used as a tool for recruiting and retaining staff, the respective onboarding processes, such as mentoring and/or a buddy, can help with the acclimation process.

The responding institutions cover very concrete topics such as job assignments, introduction to co-workers, and the evaluation process. However, areas that are not covered to the same extent include culture and politics of the institution. These may not be covered, for example, because they are more difficult to discuss or are perceived as painting a negative picture. Informational topics or material such as this might be ideal for addressing in the "buddy" relationship. In addition, as noted in the Findings section, only four libraries were able to support an onboarding program that went beyond 30 days, while other institutions appeared to implement orientations. Most respondents identified having fewer than 30 days to devote to onboarding activities. Factors such as number of annual new hires or centralized versus decentralized library human resources departments may contribute to the amount of time spent on developing and maintaining onboarding programs, web portals, and documents.

Participating institutions identified a number of new and innovative ways to engage new employees and educate them on topics that are important to the local institution. Topics such as disaster planning, diversity, and scholarly communications are areas being introduced to new employees at an earlier stage. Including topics such as these in the onboarding process indicates the extent to which these topics are valued. Other ideas, such as a small gift bag, greeting at the door, taking new employee pictures, and verifying web information, all give new employees a sense of welcome and conveys that their colleagues are excited to have them join the staff. These unusual ideas connect the new employees in ways that are important at the local level and may be adapted by different library types.

It is important to note that moving from a traditional new-employee orientation model to a best practices onboarding model will require HR professionals to conduct an internal assessment of the current program. This will require engaging recently hired staff in order to solicit candid feedback on the existing employee orientation program. In addition, HR professionals may want to answer the following question: what do we want to communicate to potential employees to increase their awareness about our institution? The onboarding process begins at the recruitment phase. Therefore, HR professionals are encouraged to gauge the public image and public presentation of the library (and home institution). In concert with the recruiting conversations, HR professionals are challenged to begin thinking about how best to incorporate the onboarding best practices into the selection process. Once a new employee is on staff, HR professionals should find distinctive ways to consistently engage and connect new employees to the organization. The onboarding process should balance and answer this need. Additionally, Libraries may want to pay careful attention to gap areas in onboarding such as politics, language, culture, and communication preferences. Finally, as the economy continues to impact budgets, recruiting, and staffing, a robust onboarding process embedded in the socialization process (versus a brief orientation) will assist libraries in successfully improving retention and performance measures.

Conclusion

Libraries are known for sharing best practices in a variety of areas such as reference, access, and instruction. The ACRL Personnel and Staff Development Officers Group is a group of leaders who have taken the first step in sharing ideas and best practices regarding onboarding. On a regular basis, the group offers efficient and innovative ways to meet the task of delivering superior HR services in libraries. Staff onboarding is a critical part of any organization, and HR professionals are consistently faced with recruiting, hiring, and retaining the best talent available. Understanding best practices and how these practices assist managerial leaders in providing paramount onboarding experiences for new employees is key to staff engagement and retention.

This research project – initiated by the 2008 PhD Cohort in Managerial Leadership in the Information Professions at Simmons College, Boston, MA – researched best practices in onboarding in ACRL Libraries with reference to the established best practice standards of the Society for Human Resource Management, and others. This research has shown that while organizations are implementing various, and sometimes multiple, components of onboarding programs, many organizations have room to improve in bringing new employees on board. The recommendations emerging from this work are that exemplary onboarding programs include implementation at the recruitment stage and the following components:

- socialization;
- policies;
- safety;
- communication;
- mentoring/buddy;
- significant program length;
- checklist for all levels; and
- unique activities identified by individual institutions

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Appendix 1

Table AI.
Summary by institution

	Institutions 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Socialization																	
Communication prior to start date		✓		✓					✓			✓					
Explanation of job	✓	✓	✓			✓	✓	✓	✓		✓	✓		✓		✓	✓
Training/shadowing	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓				✓
Expectations/ evaluation criteria	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Organizational history		✓			✓					✓	✓	✓				✓	✓
Culture		✓		✓		✓				✓		✓					
Language										✓							
Structure	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓					✓
Mission, vision, values	✓	✓		✓		✓		✓	✓	✓	✓	✓				✓	
Politics						✓											
People		✓	✓	✓	✓	✓		✓	✓		✓	✓		✓		✓	✓
Buddy program		✓			✓				✓	✓							
Mentoring program								✓									
Length of formal program	Two weeks	One year	One day	Four weeks					Six months	Six months	Six months	Three weeks				One month	Ten days
30-day follow-up		✓		✓							✓						
90-day follow-up		✓									✓						
Checklist																	
Manager		✓				✓					✓	✓					✓
Supervisor	✓			✓	✓	✓		✓	✓			✓	✓			✓	
Employee		✓				✓											

(*continued*)

	Institutions																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Review of policies																	
Compensation	✓		✓	✓	✓	✓			✓	✓		✓			✓		
Benefits			✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓			✓
Leave	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓
Attendance	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓		✓	✓
Safety orientation																	
Security	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓		✓	✓	✓	
Communication																	
Portal					✓						✓	✓			✓	✓	
FAQ															✓		
Handbook						✓	✓	✓		✓		✓			✓		✓
E-mail	✓	✓		✓	✓	✓			✓	✓	✓	✓	✓			✓	✓
Listserv access		✓			✓	✓			✓								
Other																	
Tour		✓	✓	✓	✓			✓	✓		✓	✓		✓		✓	

Table AI.

Appendix 2. Institutions that provided onboarding documents

- University of North Carolina – Chapel Hill.
- Columbia University.
- Wake Forest University.
- George Washington University.
- University of California – Irvine.
- North Carolina State University.
- Purdue University.
- Towson University.
- University of Arizona.
- University of Florida,
- Princeton University.
- University of Kentucky.
- University of Pittsburgh.
- Texas A&M University.
- University of Washington.
- Duke University.

Appendix 3. Summary of findings by topic

Topic	Responses
Socialization	
Communication prior to start date	4
Explanation of job	12
Training/shadowing	12
Expectations/evaluation criteria	17
Organizational history	7
Culture	5
Language	1
Structure	11
Mission, vision, values	10
Politics	1
People	12
Buddy program	4
Mentoring program	1
Length of formal program	
30-day follow-up	3
90-day follow-up	2
Checklist	
Manager	5
Supervisor	9
Employee	2
Review of policies	
Compensation	9
Benefits	12
Leave	15
Attendance	14
Safety orientation	
Security	17
Communication	
Portal	5
FAQ	1
Handbook	7
E-mail	12
Listserv access	4
Tour	10

Table AII.
Summary of findings by topic

Appendix 4

Item	Responses
Annual welcome from provost	1
Business cards	2
Checklist for detailed job tasks	1
Checklist of things to do before start	2
Conflict of interest	1
Copy of contract	2
Dealing with change	1
Different types of employees	1
Digital photo	2
Diversity bingo	1
Diversity presentation	1
Ergonomics	4
Faculty information	3
Gift bag	1
Governance	1
Help desk process	1
ID	3
Information literacy curriculum	1
Library awards information	2
Library trivia	3
List of useful websites	2
Local visitors information	1
Lunch with Executive Group members	1
Meet employee at entrance	1
Mention of fundraising	1
Monthly meeting to introduce new employees	1
Name plate	1
Order equipment	1
Parking	3
Promotion	1
Records retention	1
Review admin procedures	1
Review associations	2
Review consortia partners	1
Review disaster plan	3
Review of committees	1
Review online directories	2
Review schedule of set meeting dates	1
Review website	4
Schedule lunch first day	2
Scheduled orientation	2
Scheduled weekly meetings with supervisors	1
Scholarly communications process	1
Series of five programs	1
Set up desk	4
Welcome gathering	1
Welcome letter	1

Table AIII.
Other noteworthy activities

Corresponding author
Jolie O. Graybill can be contacted at: jgraybill3@unl.edu

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Christopher Millson-Martula
Editor
Lynchburg College
1501 Lakeside Dr.
Lynchburg, VA 24501
Voice: 434/544-8399
Fax: 434/544-8499
millsonmartula@lynchburg.edu

July 19, 2011

Ms. Jolie Graybill
Image & Multimedia Collections Coordinator
University of Nebraska-Lincoln
319 Love Library
Lincoln, NE 68588-4100

Dear Ms. Graybill:

It gives me great pleasure to notify you that your manuscript, **Location, Location, Location: The Impac⁺ of IM Widget Placement**, has been accepted for publication in *College & Undergraduate Libraries*. Your article is scheduled to appear in volume 19 number 1, with a projected publication date of March 2012.

Don't hesitate to contact me should you have any questions. It has been a pleasure to work with you, and know that I greatly appreciate your affording us the opportunity to review and publish your article. It is my hope that you will write for the journal again.

Sincerely,

Christopher Millson-Martula

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Location, Location, Location: The Impact of IM Widget Placement

JOLIE OGG GRAYBILL and TRACY BICKNELL-HOLMES
University of Nebraska-Lincoln, Lincoln, Nebraska, USA

In an attempt to meet ever-changing users' needs, the University of Nebraska-Lincoln (UNL) Libraries implemented virtual reference services such as e-mail, chat, and, most recently, instant messaging, in increments and via various services and vendors. Each option consistently met with a lukewarm response and less-than-desirable reference transaction numbers. After investigating the virtual reference experiences of other academic institutions, and after the advent of a more flexible Webpage design, the UNL Libraries decided to pilot strategic placement of the QuestionPoint Instant Message Qwidget on multiple pages of the library Website. Data collected in the Fall 2008 and 2009 semesters test the hypothesis that 2009 sessions utilizing the strategically placed Qwidget resulted in significantly higher sessions than 2008. The strategic placement of the Qwidget resulted in a drastic increase in reference interactions in the 2009 academic year when compared to the 2008 academic year. The overall increase in reference transactions, along with a consistent increase throughout the academic year, indicate that instant messaging reference service is of interest to our users, as long as placement of the service is prominent.

KEYWORDS *Chat, instant message, Qwidget, service placement, virtual reference, widget*

INTRODUCTION

Real-time conversation experienced through instant messaging (IM) responds to the need of immediacy of today's college population while at the same

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Address correspondence to Jolie Ogg Graybill, MEd, MIRLS, Image & Multimedia Collections Coordinator, University of Nebraska-Lincoln, 319 Love Library, Lincoln, NE 68588-4100. E-mail: jgraybill3@unl.edu

time offering a user-experience that is both dynamic and personal. Service has always been a mainstay focus of libraries, and chat and IM enhance this service feature (Padgett 2008).

In an attempt to increase virtual reference transactions and respond to user preferences for new technologies, the University of Nebraska-Lincoln (UNL) Libraries implemented an IM reference service on the library's Ask-a-Question Webpage. With a discouraging number of virtual reference transactions, a hypothesis was developed ($H_1 : \bar{x}_1 < \bar{x}_2$) that the average number of IM patrons would increase significantly from one year to the next with more prominent placement of the IM widget on the library's main page and several additional point-of-need locations throughout the Website. In August of 2009, the IM widget was added to the library's main page and to other prominent locations resulting in a substantial increase in transactions. This study was developed after the change in placement of the widget. As a result, data available to evaluate other variables such as student enrollment and page traffic was limited; these other variables seem to have played a limited role, if any, in the increase in IM traffic.

TERMINOLOGY

When the UNL Libraries QP pilot project began, "chat" referred to a synchronous conversation initiated by patron submission of a form that included name, e-mail address, a box for the question, and often additional information, such as patron status and zip code. Over the years, the institutional meaning of the term "chat" evolved into a more generic term with various meanings in various contexts. Virtual reference services have become a part of mainstream service, and they typically include e-mail, chat with a co-browsing feature, and IM (Bell and DeVoe 2008).

For the purposes of this article, the following definitions apply:

- "chat" refers to reference services offered via vendor packages such as QuestionPoint, where questions are asked via a request form and software often includes features such as co-browsing.
- "IM" refers to reference services via instant messaging, including both free services such as Meebo and vendor packages such as the QP Qwidget.
- "Transactions" refers to both chat and IM reference sessions.

UNL AND THE UNL LIBRARIES

The University of Nebraska-Lincoln (Fact Book 2009–2010) is a large, public institution with approximately 24,000 students. As a Land Grant institution, the university has a mission to serve the citizens of Nebraska beyond its university affiliates. As a member of the Association of Research Libraries (ARL) and as Nebraska's comprehensive research library, the UNL Libraries' provides access to over three million print volumes and more than 39,000 serial subscriptions, along with many other services and resources (UNL Libraries 2010).

CHAT AND IM REFERENCE AT THE UNL LIBRARIES

In an effort to further extend reference services, the UNL Libraries participated in a pilot project from March through May 2003 designed to expand the Collaborative Digital Reference Service (CDRS) project developed by the Library of Congress beyond librarian-submitted questions to a "chat" format where librarians and patrons could chat one-on-one. The pilot project tested the efficacy of a collaboration between the Library of Congress and OCLC to build the QuestionPoint software (Global Reference Network 2006).

Although the chat traffic was very light, with just twenty-six chat sessions during the pilot, the UNL Libraries subscribed to QuestionPoint (QP) as a charter member in the 2003–2004 fiscal year. From 2003 to 2008, traffic via chat climbed slowly from an average of twenty-eight to 158 transactions per month. The UNL Libraries staffed the service separately from other reference services with a small group of interested and enthusiastic librarians who monitored questions approximately twenty hours per week while relying on other academic library cooperative partners to pick up off-hour UNL questions. By 2008, chat questions remained a very small percentage of the UNL Libraries' overall reference statistics amounting to just 6.33 percent, despite students' changing technology preferences. In comparison, statistics from the Pew Internet & American Life Project found that, in 2000, 35 percent of teens were using IM daily; in 2004 that percent grew to 48 percent, and, in 2010, the number grew to 86 percent (Pew 2010).

In support of Pew's findings, several Nova Scotia post-secondary institutions found IM to be the preferred method for receiving reference assistance by both graduate and undergraduate students (Bedwell et al. 2008); in terms of overall satisfaction, IM patrons were more satisfied than e-mail and chat reference patrons by 13 percent. Interestingly, Naylor, Stoffel, and Van Der Laan (2008) had found that most students had a negative connotation with the term "chat"—associating it with "chat rooms"; these students expressed a preference for using either IM or text messaging instead of chat. During this period, universities such as Miami University in Ohio had begun using the MeeboMe! widget service, and reference traffic increased by more than 50 percent (Sekyere 2009).

In the fall of 2008, the UNL Libraries provided an experimental reference service via IM using Meebo. Meebo was chosen as the pilot software because of its ease of use, familiarity to patrons and staff, and low cost to install and support. The traffic via Meebo was low—approximately 113 questions per month during Fall 2008—yet anecdotal patron response to the service seemed to be positive. At the time, the IM service widget was only located on the "Ask a Question" page that linked to all of UNL Libraries' reference services. Data on the number of visitors to UNL library Webpages was not collected before 2009; however, use of library facilities show an increase of 5 percent from 2008 to 2009. Since 2004, when a catalog search box was placed on the UNL Libraries main page, catalog searches increased 12 percent in 2006/2007, doubled in 2007/2008, and followed with another increase of 25 percent in 2008/2009 (University Libraries Annual Report 2006–2007; University Libraries Annual Report 2007–2008; University Libraries Annual Report 2008–2009). In addition, 81 percent of the UNL Libraries catalog searches in 2007/2008 and 61 percent in 2008/2009 came from *external users* (not simply library staff) (Computer Operations and Research Services Annual Report 2007–2008; Computer Operations and Research Services Annual Report 2008–2009). There was some speculation that part of the problem of low use in the IM service resulted from patrons being unable to find the service on a lower page and that the service was not well promoted.

In the spring of 2009, the new associate dean compared the UNL Libraries' reference data to that of other ARL member libraries. After noting that UNL's electronic reference questions were low in comparison and were rising at a seemingly glacial pace, the Chair of Research and Instructional Services (RIS) was charged with recommending ways to increase the number of chat and IM reference transactions. The small group that implemented the Meebo experiment strongly recommended moving the IM widget to the main page and other key locations to make the service more visible. Based on that recommendation and anecdotal evidence shared at several QuestionPoint User Group meetings at various conferences of how traffic increased when the QuestionPoint IM "Qwidget" was placed strategically, the RIS chair recommended a more prominent and strategic placement of the IM widget on the UNL Libraries' Web pages as one method of increasing use of the service.

In 2009, UNL updated the campus-wide required Website template. The new template provided the opportunity to embed IM widgets in more locations on the UNL Libraries' Website, including on the main page. At the same time, the UNL Libraries discontinued using Meebo for IM reference service and implemented the QP Qwidget, which allowed more librarians to monitor chat and IM simultaneously. Reference staff began to answer QP chat and IM questions while staffing the reference desks, thus streamlining staffing and increasing coverage. The UNL Libraries' new page in the required template went live the week before fall semester began in August 2009, with the IM Qwidget prominently placed on the Libraries' main page and on the separate Ask-a-Question service page. Based on the recommendations of librarians, the Qwidget was also added to pages where patrons tended to need help navigating, such as the e-resources page and two digital media pages.

LITERATURE REVIEW

The literature focusing on virtual, chat, and IM reference is prolific. Due to the volume and the focus of this article on the location of the IM widget on the UNL Libraries' Web pages, this review is limited to literature published after 2007, when articles on IM for reference services began to appear. This literature review also focuses on articles that discuss the use of chat and IM for reference, particularly those that refer to placement of the services on a library's Web pages.

Notably, the National Library of Australia (NLA) implemented a trial IM service with AskNow Instant Messaging in 2006, and it was one of the earliest adopters of IM (Davis 2007). A smattering of articles discussed the placement of virtual reference service, thereby impacting the visibility, awareness, and subsequent use of the services. In one of the earliest articles, Steven Bell, column editor for *The Reference Librarian*, and co-author DeVoe noted that users found it difficult to locate and utilize an e-mail reference service when the service was located on either the Contact or the Ask-a-Librarian pages, locations typical on many library Websites (Bell and DeVoe 2008). The Milner Library at Illinois State University also found a lack of awareness of their chat reference service by conducting face-to-face focus groups (Naylor et al. 2008). The study determined that, for the most part, participants in the focus groups did not know about reference services in the library in general and were not aware that the library offered e-mail or chat reference.

The University of Central Florida (UCF) published a case study in 2008 on the frequency and content of chat questions from January 2005 to May 2006 (Goda and Bishop 2008). At the beginning of the research period, the library added a chat icon to the "desktop" of public computers in the main library in an effort to increase visibility of the service. UCF documented an increase from 2,000 questions in 2004 to 4,100 questions in 2006 during the study, suggesting that prominent placement of a chat reference service can increase use of the service.

In 2009, the University of Georgia assessed use of the Research Support Desk located in the Miller Learning Center (MLC), a combination electronic library, computing, and classroom space (Barratt, Acheson, and Luken 2010). While the space was a popular place with the students since its opening in 2003, librarians experienced disappointingly low levels of research inquiries in-person at the desk. In contrast, when an IM service through Meebo was introduced in 2006, reference traffic doubled annually. MLC librarians attributed the increase to ease of use and to availability at point of need, as the widget was placed strategically in a very visible location on the library Website.

When Samford University implemented its reference service via IM, the MeeboMe widget was embedded on the Ask-a-Librarian page. Samford experienced a doubling in reference traffic (Northrup 2008). Samford believes the service was successful due to placement of the widget, to the service's allowing IM interaction to patrons with no prior experience and to its not requiring prior account set-up. This seems to contrast directly with what Bell and DeVoe had discovered, and it leads one to suspect that Samford's Ask-a-Librarian page may have been more visible than such pages tend to be on typical library pages or that the widget was placed on additional pages as well.

To stem declining reference interactions and numbers, the University of California-San Diego Biomedical Library (BML) added OCLC's QuestionPoint Qwidget, as well as the text messaging option through Meebo and the free AIM Hack. The result was a dramatic increase in reference transactions. BML indicated that they believed the increase occurred due to the user-friendly nature of the services and to the highly visible location of the services (Coppernoll-Blach 2009).

Overall, the literature illustrates the likely impact of virtual reference service placement on the visibility, awareness, and ease-of-use of the reference services. The articles published during this time lend credence to the UNL Libraries' decision to prominently place the QP Qwidget on the Libraries' main page and elsewhere in an effort to increase use of the service.

METHODOLOGY

To test the hypothesis ($H_1 : \bar{x}_1 < \bar{x}$) that the number of IM patrons in Fall 2009 would be significantly greater than the number in Fall 2008 due to prominent placement of an IM widget on the Library's main page, this study compared data from fall semester 2008 when the Meebo widget was located only on the Ask-a-Question page with data from fall semester 2009 when the QP Qwidget was placed prominently on the Libraries' main page and elsewhere (i.e., roughly a one-group pretest–posttest design with a percentage of likely potential pretest members lost due to graduation and a percentage of likely potential posttest members added through matriculation). The authors chose to compare data from fall semester 2008 to fall semester 2009 rather than reviewing complete academic years or calendar years in order to compare daily counts of reference statistics. During 2008, the UNL Libraries collected daily counts of reference statistics. In January 2009, the UNL Libraries shifted to collecting sample counts of reference data and discontinued the daily count of Meebo IM questions in the process. When the IM service shifted from Meebo IM to the QP Qwidget in August 2009, the daily counts of IM questions were once again collected and reportable from within QP. Thus, in order to have the most detailed data available and in comparable data sets, the authors decided to analyze data from the first day of fall semester classes in August through December of 2008 with data from the same period in 2009.

The IM Meebo data available was based on hand counts made by the reference staff during Fall 2008. Tick marks were recorded daily by hour, and data could be compiled by month, week, day, and day of the week. During Fall 2009, the IM data available was based on automatically recorded use of the QP Qwidget, and it was downloadable from QP in the same format as were the chat sessions.

Within QP, data was available by both the "Number of Chat Sessions Requested" (the number of chat sessions requested by patrons of this institution/group) and the "Number of Chat Sessions Accepted" (the number of chat session requests to which a librarian responded) (Glossary: QuestionPoint Statistical Reports 2010). In order to better focus on user session requests, rather than librarian availability to answer, the data on "Number of Chat Sessions Requested" was chosen as the comparable data set for both Fall 2008 and Fall 2009. Thus, the "number of chat sessions requested" was used when retrieving data from QuestionPoint.

FINDINGS

The increase in use of the IM and chat services after re-positioning the IM Qwidget to make it more visible was startling. The overall number of transactions (chat and IM) requested increased 389.8 percent, from 452 total questions during Fall 2008 to 2,214 transactions during Fall 2009 (see Figure 1). Although the number of transactions during the first three weeks at the beginning of the semester in August were down 8 percent in the fall of 2009 due to technical difficulties, September through December showed dramatic increases. Transactions during September 2009 were up 1,000 percent, and November transactions were up nearly 1,000 percent. The apparent relative decrease in the number of August transactions in 2009 may have been due to a series of technical problems during the latter portion of August 2008 that artificially inflated the number of reference questions at the beginning of the 2008 semester (see Figure 2).

When a comparison was made of the average monthly, weekly, and daily transaction data, the numbers represented marked increases. The average monthly transactions rose from 113 in 2008 to 553 in 2009. Likewise, the average number of weekly transactions rose from thirty-seven to 116, and the average number of daily transactions rose from five to seventeen (see Figure 3).

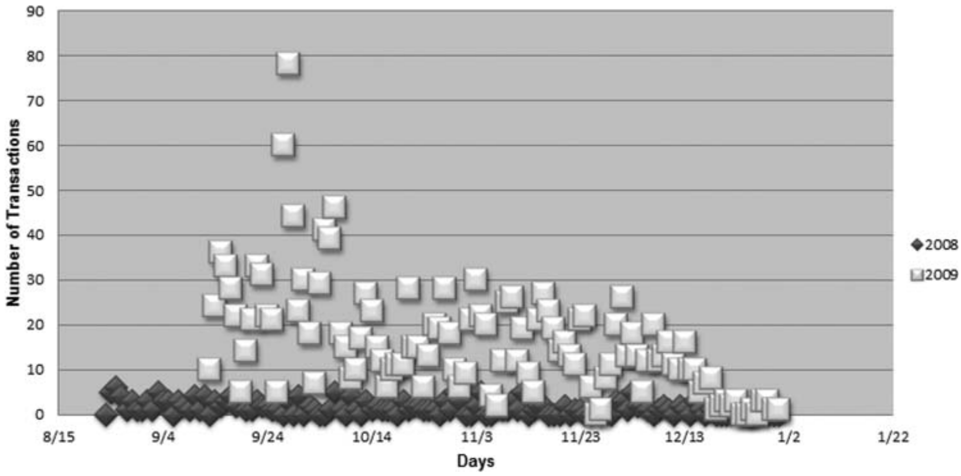

FIGURE 1 Comparison daily transactions for 2008 and 2009.

An analysis of average numbers of transactions by day of the week showed similar increases in the transaction tallies, with peak usage appearing on Tuesdays. Interestingly, Saturdays and Sundays experienced the most dramatic increases, of 440 percent and 647 percent respectively, followed by Mondays, Tuesdays, and Thursdays, with an average percentage increase of 235 percent (see Figures 4 and 5).

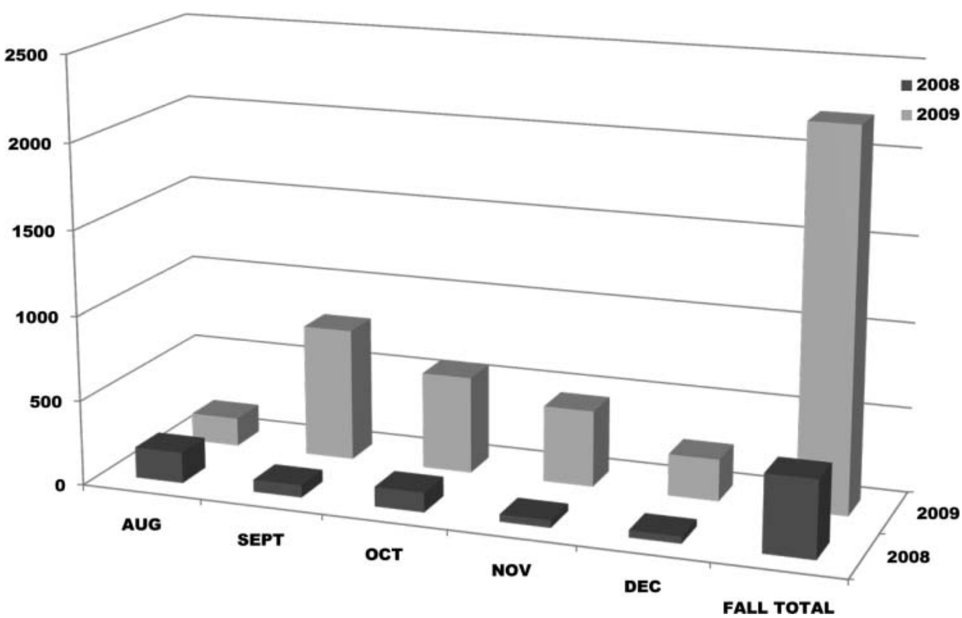

FIGURE 2 Total monthly transaction.

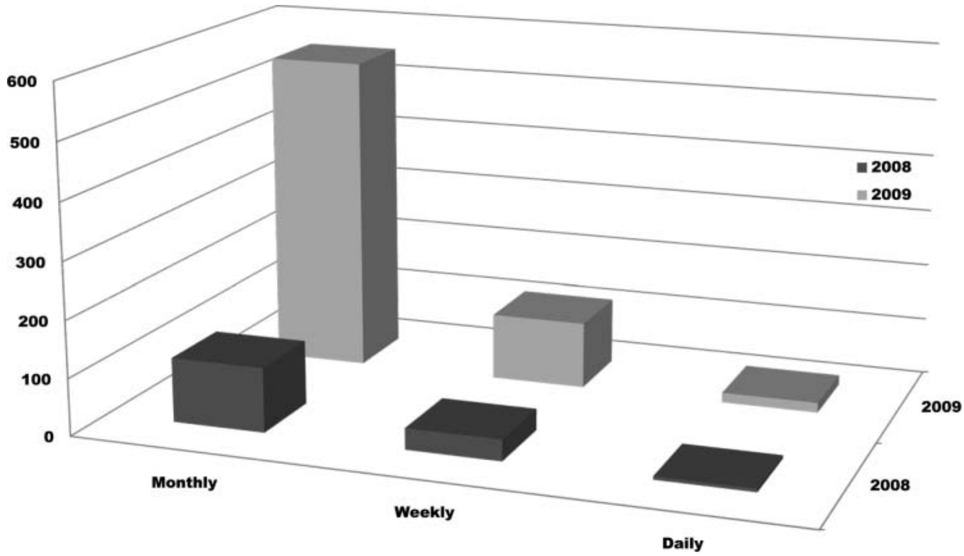

FIGURE 3 Monthly, weekly, and daily transaction averages.

Within the data, a dramatic shift in reference transactions away from the traditional, form-based chat service began when IM was implemented with Meebo during Fall 2008. IM Meebo traffic immediately began to eclipse chat traffic. IM Meebo transactions amounted to 65 percent of reference transactions overall in 2008. The trend continued when the QP Qwidget was placed more prominently on the UNL Libraries' main page and at point of need on additional pages. In the fall of 2009, QP Qwidget transactions comprised 95 percent of transactions overall (see Figures 6 and 7).

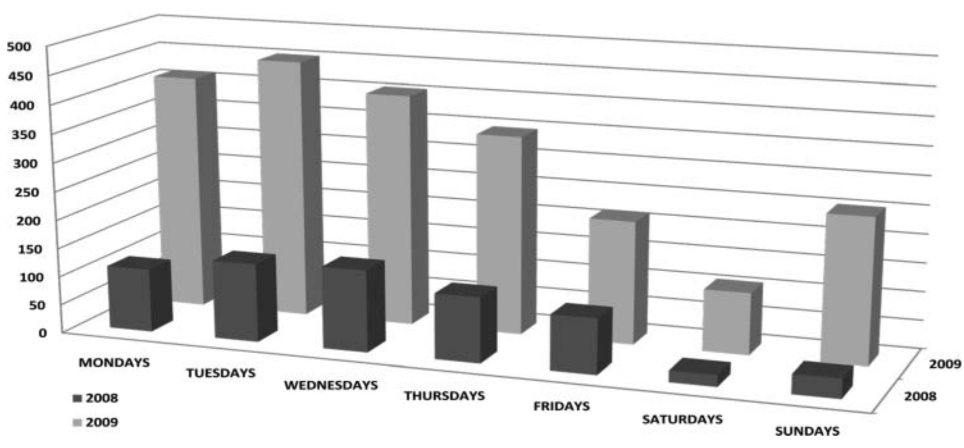

FIGURE 4 2008—2009 Chat and IM sessions, weekday averages.

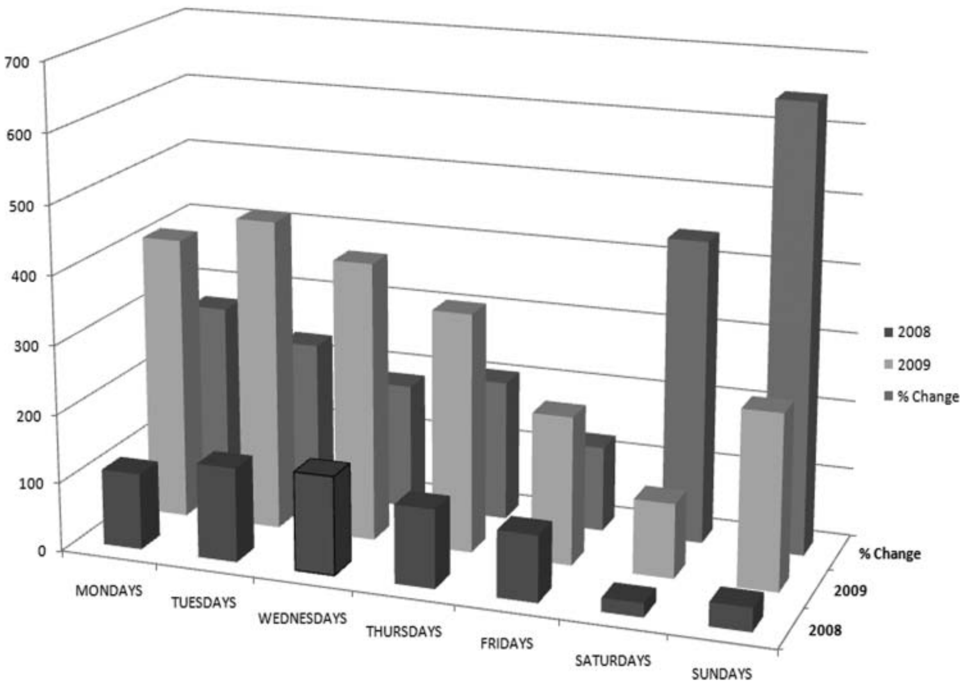

FIGURE 5 Percent change by weekday.

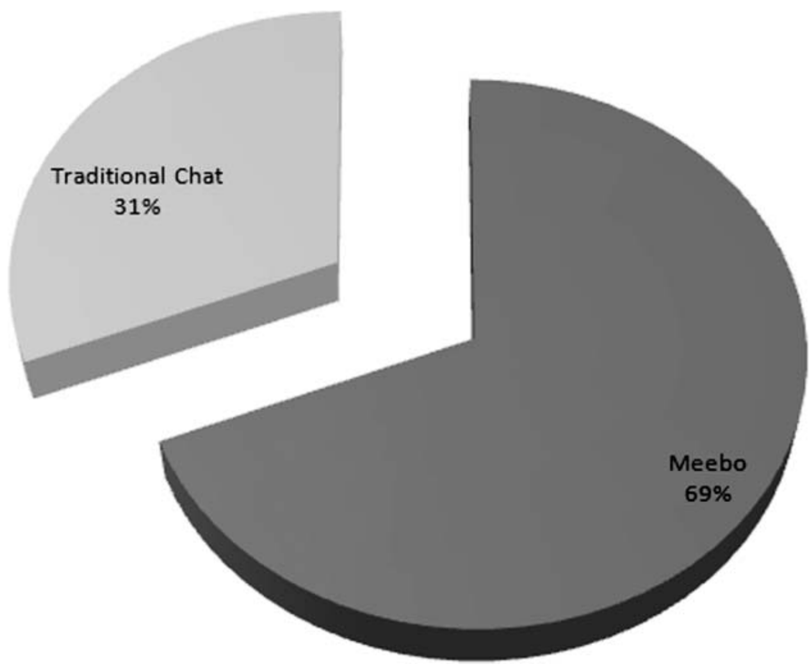

FIGURE 6 Fall semester 2008.

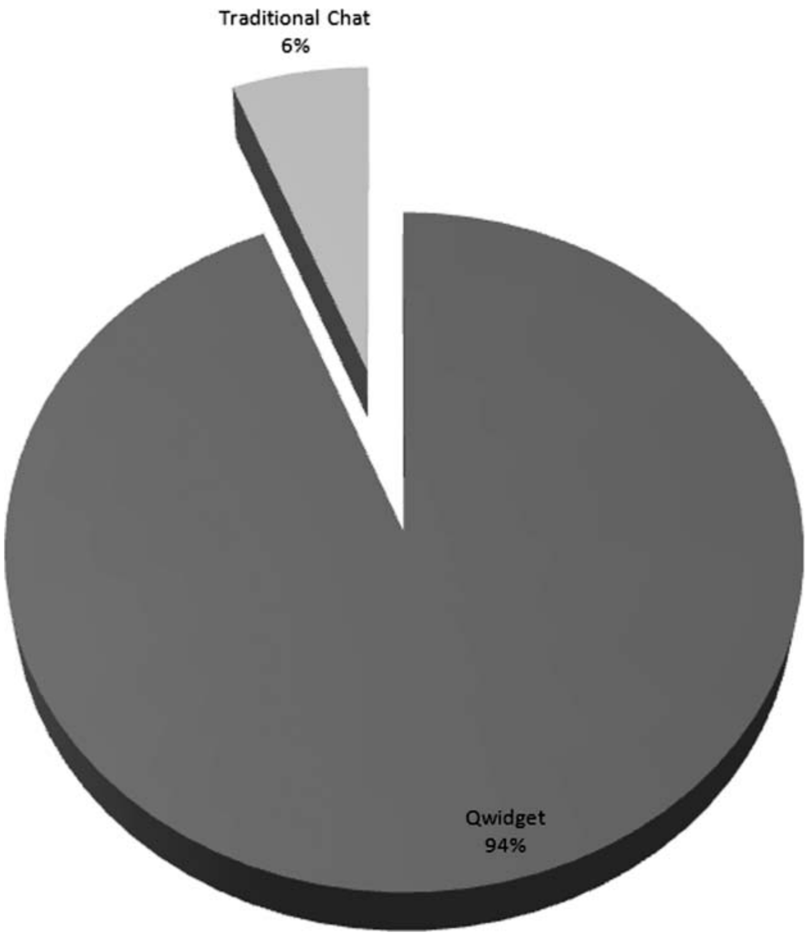

FIGURE 7 Fall semester 2009.

To further ascertain the impact of the IM Qwidget move, the authors conducted several tests to validate the hypothesis that a statistically significant difference existed between the 2008 and 2009 fall semesters. As the results show, variances tested to be unequal, indicating that the Satterthwaite variant of the t-test should be used. To be thorough and conservative, and because the authors had not established normalcy of the data distributions, the authors followed up with a non-parametirc test by conducting the Wilcoxen Two-Sample test.

The Satterthwaite test and the Wilcoxen Two-Sample test found similar significant differences between the pre- and post-test IM samples; that both the parametric and nonparametric approaches produced similar results should reassure that the very apparent difference between the two samples is very likely to be real. The Wilcoxen test shows that the results of the Satterthwaite test persist even if the fundamental assumptions of the t-test are

Method	Variance	DF	t Value	Pr < t
Satterthwaite	Unequal	111.62	I 12.22 I	<.0001

TTest Procedure

Year	n	Mean	Std Dev	Std Err	Min	Max
2008	110	1.3091	1.3863	0.1322	0	5.0000
2009	110	16.1364	12.6531	1.2064	0	78.0000
Diff (1-2)		I 14.8273 I	9.0006	1.2136		

FIGURE 8 Comparison of 2008 and 2009 IM sessions (Parametric).

violated. In addition, the two tests (Satterthwaite and Wilcoxen) were run using the first two weeks of data from 2009 (zeros due to technical difficulties) and also after eliminating the first two weeks of data. Results from both sets of tests showed statistically significant results with a negligible difference in t values and no difference in p values. Regression analysis was not possible for this project due to the fact that UNL Libraries experienced two simultaneous changes in the characteristics of the IM service (the Qwidget placement move and the switch in providers). The difference between the service providers, from the perspective of the user, was negligible; thus, it would seem intuitively unlikely that the switch in service providers could be responsible for the great difference between the two IM samples. The change in location of the Qwidget would be the more likely cause, for logical rather than statistical reasons, and the statistical tests results emphatically support the difference experienced between 2008 and 2009.

The authors were encouraged that both approaches showed statistical significance which supported the hypothesis that moving and strategically placing the Qwidget impacted the visibility and therefore the use of the Qwidget (see Figures 8 and 9).

DISCUSSION

As with any study of this sort, the data has some limitations. For example, the IM Meebo data was based on a daily hand count, which is only as accurate as were those recording the data. Also, the study did not address repeat use or the impact of patron satisfaction on use. Perhaps preference for or satisfaction levels with IM were higher than with chat, and that accounted for some of the shift toward IM (Naylor et al. 2008).

Although it appears that the transactions shifted dramatically from chat to IM with the prominent placement of the QP Qwidget on the main page, part of the shift could have occurred because of the fact that the chat form remained relatively less visible on the Ask-a-Question page. One would be inclined to wonder: if a link to the chat form had been placed on the

Wilcoxen Scores (Rank Sums) for Variable Count Classified by Variable Year					
Year	n	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
2008	144	12794.0	138240.0	6391.59725	88.84722
2009	1775	1829446.0	1704000.0	6391.59725	1030.67380
Wilcoxen Two-Sample Test					
Statistic			12794.0000		
Normal Approximation					
Z			I 19.6266 I		
One-Sided Pr < Z			<.0001		
Two-Sided Pr > I Z I			<.0001		
t Approximation					
One-Sided Pr < Z			<.0001		
Two-Sided Pr > I Z I			<.0001		

FIGURE 9 Comparison of 2008 and 2009 IM sessions (non-parametric).

main page as visibly as the QP Qwidget, would more users have chosen chat? While prior studies suggest not (Naylor et al. 2008), it does remain a possibility.

UNL experienced a slight increase in enrollment from 2008 to 2009 of less than 1 percent of full-time equivalent (FTE) students (Fact Book). It is doubtful that this small increase in UNL's student population impacted use of the service dramatically, as the increase in the number of students was proportionally much smaller than the increase in the number of questions.

The shift may also have occurred as a result of student preferences for IM as a communications medium (Bedwell et al. 2008; Naylor et al. 2008). The UNL Libraries' shift toward favoring transactions via IM had already begun with the Meebo widget being placed on the Ask-a-Question page. Perhaps the trend would have continued without the move of the widget; however, the Meebo widget software had limitations of not allowing for multiple placement on different pages or multiple staff logins which resulted in the change to QP Qwidget.

What seems clear, however, is that the UNL Libraries' results reinforce Bell and DeVoe's (2008) claim that placement of virtual reference services impacts visibility and use. As with the case studies by the University of Central Florida, the University of Georgia, and the University of California San Diego's BML, the UNL Libraries' study saw a more dramatic increase in reference transactions with the IM Qwidget placement on the main page and at point of need.

CONCLUSION AND RECOMMENDATIONS

Based on the results of this study, the authors recommend that library administrators identify key services of interest to users and work with Web page designers to feature those services on the library's pages. Also, when analyzing the visibility of the IM reference service, it was clear that having data on the popularity of a page based on hits would have been helpful in justifying or rationalizing the location of key services and the less visible location of others. Analytical tools that record user traffic and the origination of that traffic should be implemented and the data used to improve Web page design. Visibility of key services should be prominently located on high traffic pages at point of need.

As with other studies, the UNL Libraries found that when the IM service was implemented to meet the technology preferences of students, reference transactions increased. Initial placement of the service on the traditional Ask-a-Question page resulted in a slow increase in transactions.

The strategic re-placement of the IM Qwidget on the library's main page as well as other high traffic pages dramatically and rapidly increased the number of reference transactions received. This experience mirrored that of other institutions and studies. However, the percent increase was much greater at the UNL Libraries. Placement of the IM widget on the main library Webpage and at point of need in multiple locations appeared to play a substantial role in the remarkable increase in use of the service.

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APPENDIX TWO

Scholarly and Creative Activities

Publications

Brief Description:

- Carpenter, M. & **Graybill, J.O.** & Jerome Offord Jr & Piorun, M.(2011). Envisioning the library's role in scholarly communication in the Year 2025. *portal: Libraries and the Academy* 11(2), 659-681. The Johns Hopkins University Press.
  REFEREED

My Role:

I participated as a team member with Simmons PhD cohort, assuming responsibility for identified segments of the research project and subsequent writing as well as establishing and adhering to deadlines. In addition, I assumed statistical responsibilities for this project, and then spearheaded leadership of the submission process for portal: Libraries and the Academy article.

Significance/Impact:

Total Number of downloads since publication: 463

Numberof citations: 6

This article was published in portal: Libraries and the Academy with a digital copy housed in the UMassMed Digital Commons as of April 2011.

Envisioning the library's role in scholarly communication in the Year 2025 examines the future to evaluate the role of libraries in the scholarly communication process, something no study to date has done. Library managers will benefit from the findings as they reflect on the role of their library in the scholarly process, and then link that with the strategic planning process and decision-making at their institutions.

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Envisioning the Library's Role in Scholarly Communication in the Year 2025

Maria Carpenter, Jolie Graybill, Jerome Offord, Jr., and Mary Piorun

abstract: This research probes future roles for libraries in the scholarly communication process through the use of scenarios. The researchers asked 20 ARL library directors to read and provide constructive comments on the scenarios, name the scenarios, and either select a scenario that most closely matched their vision or propose a new scenario. The directors identified six possible futures. Issues such as library as publisher, the economy, and the need for collaboration are discussed, as well as the timeframe for such futures and the desire versus the likelihood of a particular scenario happening.

Introduction

Scholarly communication is, in part, the process through which scholars and researchers communicate the results of research or other creative endeavors to their peers, formally or informally.[1] Formal methods of scholarly communication include publication of books or articles in peer-reviewed journals, while informal methods, resulting in what is commonly referred to as grey literature, include publication of papers in conference proceedings, pre-prints, white papers, and posters. Grey literature is sometimes made publicly available on conference or personal websites or is stored in institutional or subject repositories. Other methods of scholarly communication are the use of blogs, online discussions, social networking sites, "scholarly hubs" (website communities created to facilitate the connection and collaboration of researchers working within specific disciplines), the exchange of e-mails and phone calls, and face-to-face conversation.[2]

The key players in scholarly communication are authors; editors of peer-reviewed journals and the peer-reviewers who make judgments about quality; publishers of peer-

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reviewed journals and scholarly books; various associations hosting subject repositories; database services and search engines that provide navigation, search, and retrieval functionality. The traditional role of libraries in the scholarly communication process has been to organize and provide access to physical and virtual collections, assist researchers and scholars in finding relevant sources and in locating citations to their works, and preserve the written works of their respective institution's scholarly community.[3]

Continuing developments in Web-based publishing software have had an impact on scholarly communication by (among other things) expanding the network of scholars and researchers sharing similar interests. Repositories (institutional and subject) and self-publishing technologies increase the availability of digital content that can be accessed from the office, home, or any location. The University of Rochester, for instance, added new features to its institutional repository to allow for version control of documents and allow faculty members to generate personal researcher pages similar to personal pages on Facebook. The goal of efforts such as these is to strengthen scholarly collaboration and to cultivate the use of institutional repositories.[4]

Libraries are also attempting to alter the current scholarly communication process by promoting open access publishing alternatives. Educational programs have been developed to teach librarians how to talk to faculty about open access and address faculty concerns about peer-review and tenure. Open access initiatives are more important in some disciplines than others. Examples of such initiatives that have the potential to transform scholarly communication include the Directory of Open Access Journals (http://www.doaj.org/), the Scholarly Publishing and Academic Resources Coalition (SPARC, http://www.arl.org/sparc/), the National Institute of Health's (NIH) public access policy, institutional self-publishing projects such as York Digital Journals Project at York University, discipline-specific scholarly communication portals, and institutional repositories.[5]

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With the evolution of open access initiatives, faculty involved in tenure and promotion processes have additional publishing venues to select when deciding where to publish. Tenure and promotion committees at local institutions continue to shape perceptions of quality and determine which research dissemination methods have greater authority within disciplines. While some institutional repositories and other digital publishing initiatives have flourished, overall acceptance by the majority of faculty involved in promotion and tenure has been lukewarm. Conversely, the consolidation of commercial publishers, the continued rise in cost of journals, and the impact of the global economic downturn on library budgets continue to challenge institutions and libraries to rethink, reuse, and repackage scholarly communication.

The role libraries assume in the future as they develop new services to meet the needs of faculty, researchers, and students is yet to be determined. The 2009 ITHAKA Survey describes the dilemma:

> "On the one hand, the fields whose practices are most traditional appear to contain the library's greatest supporters; therefore, if the library shapes its roles and activities based on what is currently most highly appreciated by faculty, it may lose a valuable opportunity to innovate and position itself as relevant in the future. On the other hand, if the library develops new and innovative roles and services that address unmet needs, becoming newly relevant and even essential to those scholars who have moved furthest away from it, in the near term it may lose the support of its most ardent supporters."[6]

Problem Statement

In the increasingly complex world of scholarly communication and the varied technologies, tools, and services available to libraries—including institutional repositories, open access initiatives, self-publishing / e-publishing models, and social media software—librarians are in a position to envision, shape, and articulate their future role in scholarly communication. No study has systematically looked beyond the present and probed the role of libraries in the scholarly communication process for the near future. The purpose of this study is to fill that void by exploring different roles that libraries might assume. Those roles are cast in terms of future scenarios.

In the increasingly complex world of scholarly communication and the varied technologies, tools, and services available to libraries—including institutional repositories, open access initiatives, self-publishing/ e-publishing models, and social media software—librarians are in a position to envision, shape, and articulate their future role in scholarly communication.

The findings of this study will benefit library managers as they reflect on the role of the library in the scholarly communication process and link that process to strategic planning, decision-making, and the accomplishment of the institutional mission. The study provides an opportunity for librarians to plan for change, either incremental or radical, and envision possible roles. By having a better idea of the role libraries could play in the future, library leaders can initiate strategic partnerships that prepare and position libraries to optimally serve the future needs of researchers in the area of scholarly communication. Moreover, librarians can work together with a broad set of stakeholders to ensure that their preferred visions, as identified through the research process, are achieved.

Literature Review

Use of Scenarios

Scenarios comprise mini case studies that lay out the components of a future direction and offer the experience of entertaining new and uncharted ideas when considering significant change.[7] When organizations consider scenarios, the process provides opportunities for "informed conversations" by generating the broadest ideas of what a future could look like, depending upon different combinations of factors and forces. The ideas generated can then be applied by institutions considering a change in direction, improving short-term decision making and expanding long-term strategic planning.[8]

Scenarios have been developed to understand possible futures for digital libraries,[9] the role of the Federal Depository Library Program in member libraries of the Association of Research Libraries (ARL),[10] and the future of academic health science libraries.[11] A current scenario project sponsored by ARL engaged the member community in contemplating possible situations in the future. The group pinpointed important implications and created a set of future scenarios. These scenarios were designed as a resource for member libraries to use in their strategic planning endeavors and to encourage organizational alignment focusing on change. Furthermore, a toolkit was developed for use by library leaders involved in planning and decision making. The intent was to identify the "social, technological, economic, political/regulatory, and environmental driving forces impacting research libraries in the future."[12]

In a recent study conducted by the Association of College and Research Libraries (ACRL), 26 future scenarios were identified.[13] Five of the scenarios in this particular futures study touched on the scholarly communication process and related issues. For example, one future included the opening and sharing of archival materials around the world while other futures cultivated open peer-review processes, online publications, and vigorous community-based dialogue. Potential library roles in these futures included curating digital materials, promoting open access, partnering with commercial publishers regarding the use of textbooks and other materials for education and research, and greater cooperation with university presses.

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Future Role of Libraries in Scholarly Communication

The literature on scholarly communication identifies a number of roles for libraries. One of these is to be a "nexus of communication," meaning that libraries are in a position to promote projects, assist users in discovering digital works, and fill an important need by addressing the issues associated with preservation of scholarship.[14] Castelli states that the role of the library has traditionally been to provide metadata, promote standards, and to support open access initiatives.[15] To be successful in the new era of scholarly communication, however, librarians need to assume new roles. Lewis warns that libraries risk being overlooked if they fail to be proactive and do not present themselves as willing partners in initiating digital projects.[16]

One way that a library can become a nexus is to expand partnerships with faculty. Maron and Smith believe libraries can provide guidance on new projects by offering assistance with issues such as scholarly legitimacy and credibility.[17] Many librarians recognize the need to take on additional responsibilities to support faculty in the research process, such as assistance with literature reviews. As service-oriented organizations, libraries need to forge stronger connections with users, incorporate user feedback, and design scholarly publishing systems that address user needs and information-seeking behavior.[18] The Council on Library and Information Resources (CLIR) encourages libraries to take a leadership role in developing in-house training programs to prepare librarians to be an integral part of scholarly communication on their campuses.[19] Librarians need to develop new abilities if they are going to play a proactive role in the future, including developing project management skills to aid in planning for long-term sustainability of new services, having a better understanding of the needs of faculty as authors, and developing better knowledge of the publishing process as a whole (e.g., selection, peer-review, and manuscript production).[20]

Another way for libraries to become central to the scholarly communication process is to move from being consumers to creators of information and to partner with local university presses.[21] To achieve this shift, CLIR encourages libraries to become active in cross-campus collaborations for scholarly publishing, to manage institutional repositories and data curation projects, and to participate in the development of new digital resources.[22] Writing on behalf of SPARC, Crow suggests that one future role for libraries is to partner with local university presses to create a new, stronger, and more viable publishing model.[23] This kind of partnership may open up access to alternative sources of funding (government, philanthropic, or earned revenue), improve access to collections, and provide new publishing platforms.

Another way for libraries to become the nexus of scholarly communication is to help with information dissemination. One white paper on the university's role in the dissemination of research and scholarship recommends that institutions hold discussions on rights and management practices and on intellectual property policies.[24] Additionally, libraries can help with dissemination by promoting the use of infrastructures such as institutional repositories and by expanding their capabilities.[25]

The National Institutes of Health (NIH) Public Access Policy, made permanent as part of the Omnibus Appropriations Act in March 2009, is considered a major step forward in scholarly communication and the role of the library in scholarly communication. Libraries used this opportunity to educate faculty, researchers, and administration about the larger open access (OA) movement and to assist with compliance issues. As Gedye declared, "If OA is to become the future of scholarly publishing, it needs skilled and responsible management, and librarians clearly possess the talents for this … they may also become crusaders, educators, investors, aggregators, and developers, all with the ultimate goal of supporting an easily accessible, interconnected international network of quality research, available to all who might need to use it."[26]

While both earlier and current research studies indicate early adoption of OA,[27] the Calver and Bradley research, often considered an outlier, cites evidence of open access publishing stalling or not thriving as anticipated in the field of conservation studies. Calver and Bradley found that open access "had no statistically significant influence on the overall number of citations per journal paper. Journal papers were cited more frequently if the authors had published highly cited papers previously, were members of large teams of authors, or published relatively long papers, but papers were not cited more frequently if they were published in an OA source."[28] While this might not depict complete OA failure, Calver and Bradley's research shows that OA is not yet the thriving entity some proponents have chosen to illustrate.

Objectives

The objectives of this study are to develop a set of relevant scenarios that depict the role of the library in the scholarly communications process in 2025, refine those scenarios, and develop titles for each scenario appropriately. As part of the study the researchers will then determine which scenarios generated the most interest.

Procedures

The literature review suggests three possible futures for the role of academic libraries in scholarly communication:

1. *Status quo*. Libraries continue to play an educational role in scholarly communication. Many libraries have a librarian tasked with educating faculty about scholarly communication issues and have representation on a faculty committee that deals with scholarly communication issues, such as journal pricing or open access mandates. Libraries invite faculty to participate in digital repositories, but the majority of faculty do not. The faculty tenure process remains unchanged, and faculty still want to be published by the most highly rated journals in the field, most of which are proprietary journals. Some open-access journals continue to thrive. Journal inflation continues its upward trend.
2. *Increased support/leadership*. Libraries increase their role in the arena of scholarly communication. Library leaders form committees and offices that work to develop new models of scholarly communication that support increased research efforts and access to information.
3. *More of a central player*. Through innovative partnerships, libraries become the "nexus" of scholarly communication.[29] Libraries partner with faculty, publishers, and information technology specialists to push forward new models of scholarly communication that involve collaboration across campus and institutions.[30]

Based on these futures, the authors developed four initial scenarios, each of which projects a different plausible future role for libraries to assume in scholarly communication fifteen years into the future (i.e., 2025). When creating the initial scenarios, the authors took into account that looking beyond fifteen years lessens the accuracy of the prediction,[31] and that a maximum of four scenarios is recommended when using this method.[32] Each scenario should be plausible (depict a future that is capable of happening), differ from each other (together the scenarios offer different futures), have decision-making value (offer new understanding of the future that assists in planning and decision making), and be challenging (to conventional thinking about the future). This study aims to produce a final set of scenarios that meet the above criteria.

The initial set of scenarios identify four different roles for libraries, and assume additional changes in technology, collaboration, publishing models, the economy, and user

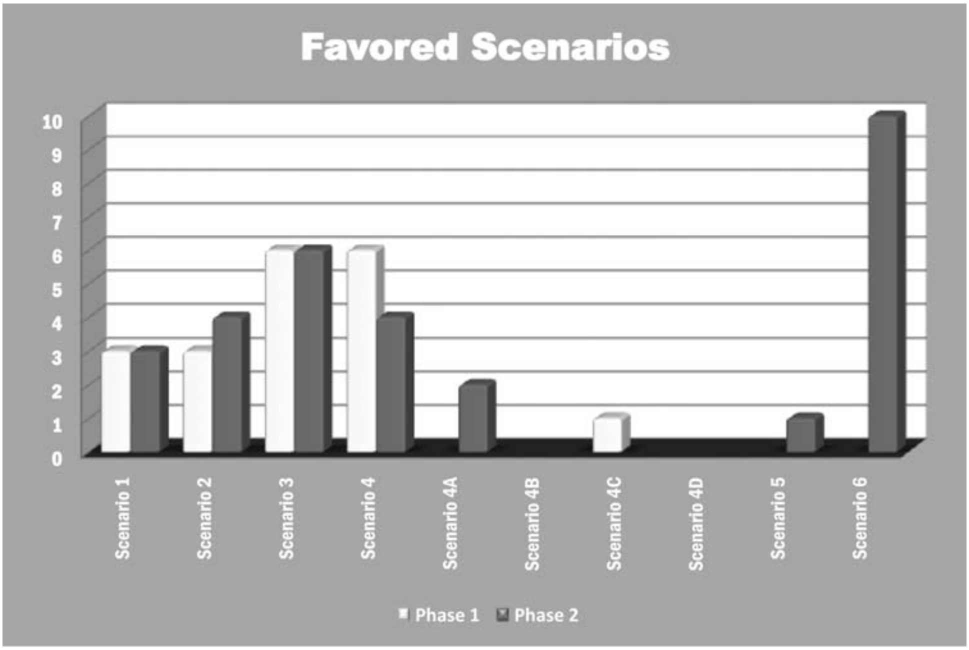

Figure 1.

behavior. In the first scenario, the status quo continues for the library as time passes and the majority of circumstances remain the same. In the second scenario, the library creates an office for scholarly communication. In the third scenario, the library showcases faculty and student research and collaboration is led by a scholarly communication team with various specialties. In the fourth scenario, the library becomes the publishing center on campus.

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In writing these scenarios, the authors tried to avoid making assumptions for which there was no basis in the scholarly and research literature. Two experts on scholarly communication were selected to pre-test the scenarios. Based on their comments, the authors revised the introduction to the scenarios and incorporated feedback into the initial set of scenarios (see Appendix).

The researchers identified library directors to read and provide constructive comments on the scenarios. As is standard practice for this type of study, the authors compiled a purposive sampling frame of X elements with appropriate expertise and status, and the sample for the study (n = 20) may be characterized as a non-probability convenience sample at the element

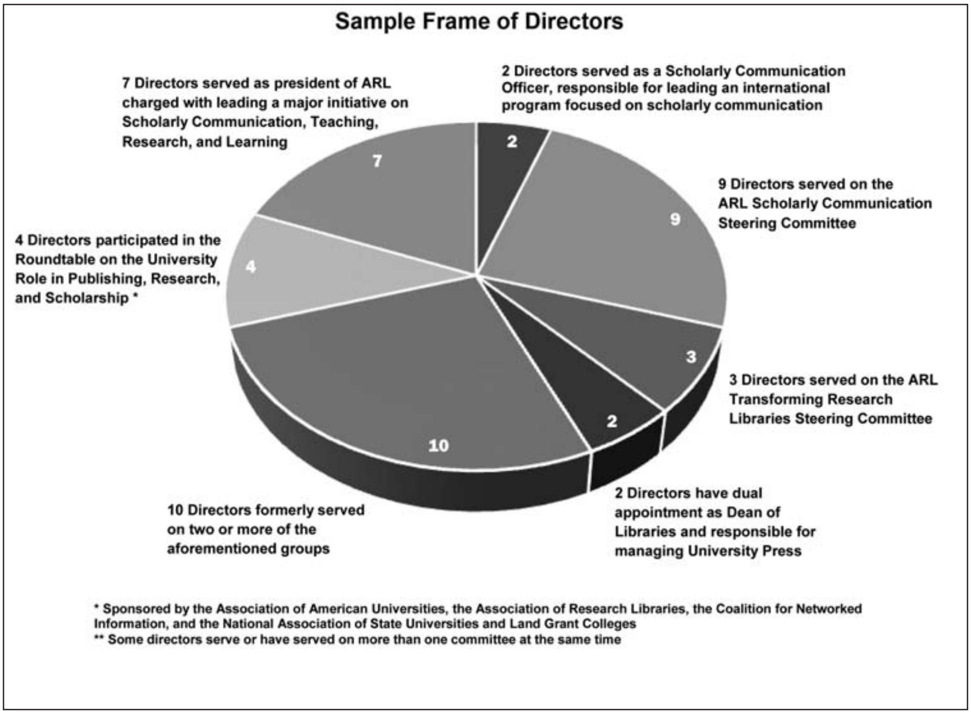

Figure 2.

level drawn via the mechanism of self-selection (i.e., willingness to participate).[33] Of the sample elements, fourteen are directors serving on one or more of three committees: the ARL Reshaping Scholarly Communication Strategic Direction Steering Committee, the Scholarly Publishing and Academic Resources Coalition's (SPARC) Steering Committee, or the Association of College and Research Libraries' (ACRL) Scholarly Communication Committee. These groups were chosen because they focus on leading a national agenda and strategic direction on scholarly communication on behalf of academic libraries. The remaining six directors were selected because of their former role in one of the aforementioned groups, specifically relating to scholarly communication activities. All of the participants were ARL library directors at the time of the research.

Findings

Of the twenty ARL directors interviewed, in Phase One (see Chart 1) six directors, or 60.0 percent, selected one scenario, the remaining four, or 40.0 percent, chose a combination of two or more scenarios. Scenarios 3 (Librarians Role Reinvented) and 4 (Library as Publisher), either alone or in combination, were selected six times each. One participant in Phase One expanded scenario 4 and selected scenario 4C when asked which scenario was favored, bringing the total number of participants selecting scenario 4, or some element of scenario 4, to seven in Phase One. In addition, scenario 2 (Library as Catalyst) and scenario 3 (Librarians Role Reinvented) were selected three times in Phase One;

scenario 2 was always selected in combination with another scenario. Scenario 5 (Failure to Succeed) was suggested as a possible future in Phase One but was not favored (see the Discussion section following Alternative Scenarios).

In Phase Two, similar to Phase One, five directors, or 50.0 percent, selected a single scenario and five selected a combination of two or more scenarios. Thus, 55.0 percent (11) of the directors chose one scenario. Scenario 3 (selected by six directors) was the favored scenario during this phase. Additionally, scenario 5 was selected in combination with scenarios 1-4 by one director, who stated that things are moving so quickly, and with the driving forces varying from library to library, the future is a combination of all the proposed scenarios. The sixth scenario (Alignment of Pedagogy with Practice) was suggested in Phase Two but was not selected.

Although there were differences in the wording between Phase One and Phase Two scenarios, and while some directors preferred to select components from different scenarios, 13 of the directors, or 65.0 percent, preferred scenario 4 (Library as Publisher).

Finalization of the Scenarios

To highlight the changes in scenarios, the nonitalicized content in the following descriptions emphasizes results from the pretest and the Phase One of interviews which developed into five scenarios from the original four scenarios presented to the directors. The italicized content emerged during Phase Two of interviews with a final number of six scenarios.

Scenario One (Surviving through Collaboration)

Each year, the library faces additional cuts and difficult choices while trying to meet the research needs and requirements of faculty and students. The economic downturn of 2009 and 2010 and the subsequent slow recovery impacted the university's endowment, which has not regained its pre-recession performance. *While faculty have been slow to embrace the principles of open access, the most recent mandate of Public Access for Federally Funded Research is proving impactful with a significant rise in deposits and faculty scrambling to identify new publishing opportunities. Credibility and reputation of discipline-specific open access journals are flourishing with increased submission of faculty articles.*

The library increases its involvement in consortia partnerships in an attempt to share costs and provide access to needed databases and other resources. The consortial focus has shifted from like-type of library, such as research libraries, to public, private, academic and other types of libraries within a given region that work collaboratively to leverage each other's strengths and weaknesses. *Decreasing budgets and increasing retirements forces the library to rethink staff expenditures and implement consolidation of some positions such as cataloging, with other like institutions. Sharing of resources expands, and the library begins to acquire institutional repository deposits from other institutions in the region.*

The library continues to *examine and* evaluate resources in order to determine utilization, with efforts going to renegotiating contracts to eliminate pre-packaged collections that pair under-utilized resources with high demand items in an attempt to benefit from purchasing only requested items. Despite consequences of the three combined financial effects of shrinking budgets, recession, and journal inflation, the library persists in acquiring new materials, some of which include highly respected digital journals, and drop other less-utilized resources or items of diminished academic reputation. *The library leads the local consortium in successfully cultivating a regional* digital repository *which showcases the research flow of participating institutions in a stunning display. Additionally, the library facilitates* workshops and informational programs on open-access *and scholarly publishing.*

Driving forces for this scenario are university administrators, library directors addressing shrinking budgets, the impact of severe economic conditions, and expectations to expand formal collaborations with other institutions. The library increasingly is forced to do more with fewer resources while publishers and vendors continue to increase prices.

Scenario Two (Library as Catalyst)

The library takes an active role in scholarly communication *and the protection of intellectual property* on campus. The library, with support from the Provost, establishes an office of scholarly communication with the mission to increase access to scholarly works. The library is responsible for developing a long-term strategy with faculty, information tec*hnology services, and consortium members. The new strategy emerging from the collaboration allows librarians to actively* promote scholarly communication across the institution *and define their role in helping to protect the institution's intellectual property created by faculty. Faculty respond positively to the library's* robust education program on author rights, and archiving of scholarly research and scientific data, regardless of the format, in the institutional repository. *The library manages a fund to pay submission fees for faculty wanting to submit to open access journals.* The office of scholarly communication *collaborates and is recognized nationally* in order to encourage faculty to incorporate scholarly communication issues into the curriculum and to engage students, especially graduate students. The office of scholarly communication partners with the office of sponsored research and faculty governance to adopt an open access mandate that reduces the *transfer* of copyrighted research, supports the rich tradition of publishing for tenure, and promotes global access to scholarship.

The driving forces for the creation of the scholarly communication office are the library's desire to: increase *the university's* role in dissemination of knowledge; help to aggressively shape author rights, such as retaining copyright *on research and course materials used in an open curriculum forum*; provide increased access to faculty research; and support an emerging scholarly communication model. The future of publishing is a growing cost for libraries and the condition of the economy is making it difficult for libraries to keep up with traditional print materials. The new scholarly communication models take into account retained copyright, open access, and varying digital formats included in the institutional repository. These new formats, along with the ways in which research is being disseminated, provide additional opportunities for faculty to publish scholarly research in many outlets, including making it available in institutional repositories and in the public domain. In this role, the library is fostering a deeper understanding of scholarly communication issues and building the *university's* institutional repository.

Scenario Three (Librarians Role Reinvented)

Collaboration flourishes between librarians, *research* faculty, and technology experts across the university. The library recruits staff with *advanced subject knowledge*, as well as expertise in data *mining*, management, and curation. *These new skills, paired with expertise in* information policy and copyright, *result in a new type of library employee that bridges the gap between faculty needs and new library services. These new librarians are able to form vigorous, sustainable, long-term relationships with research faculty; they are recognized for their expertise and contributions and have become fully integrated into the* department. Over the past decade, federally funded research was conducted to determine how faculty members work in specific disciplines and to discover how they used data. Subject librarians are able to apply findings and collaborate fully with faculty on complex projects because they are viewed as partners in the research process. Librarians play a primary role in managing information for projects of all sizes, including bibliographic management, data creation and preservation, usage-rights, and assisting with the distribution of finished works and raw data by promoting open access and *local and national data repositories*. *The library continues to offer traditional curriculum-based support for teaching and learning. Librarians and library resources are embedded in each course, and when appropriate, librarians promote the use of raw data sets in the classroom. Archivists and preservation specialists apply their knowledge and skills to the digital environment.*

Librarians can play a primary role in managing information for projects of all sizes, including bibliographic management, data creation and preservation, usage-rights, and assisting with the distribution of finished works and raw data by promoting open access.

The driving force is that the library leadership wants *to provide relevant services for faculty and students in the new data intense environment. The library provides* distinctive expert services *(e.g. the creation of new tools for data mining), and relates these services* with the university's desire to showcase, control, and highlight faculty output. *As a result of funding agencies enforcing requirements for data plans that include how data will be shared and preserved for re-use*, there is an identified gap (opportunity) to *share best practices* across the disciplines. The library director, *being central*, seizes his/her chance to coordinate activities by being a full partner at the start of projects. The library's primary roles include collaboration, information policy expertise, and data curation.

Scenario Four (Library as Publisher)

The library increasingly plays a role in scholarly publishing on campus *and with the support of the academic leadership*, takes on digital publishing operations as part of its primary operations, reallocating resources to this function. Four variations of this scenario are described below.

a. The library plays an important role in scholarly publishing on campus *after taking time to learn how presses work and acquiring needed skills. Initially, the library man-*

ages the technology, then progresses to managing operations, and finally to leading the entire scholarly publishing enterprise. Publishing focuses on digital scholarship (away from book digitization that was in its heyday a decade ago). The library enfolds *some of* the former work of the university press, *aggregators, and for-profit publishers* into digital publishing operations and hires staff with expertise in marketing, document production, publishing, *indexing,* and editing to help with scholarly publishing efforts. As the role of publisher becomes *a central function,* the library reallocates resources, reinvents positions for digital publishing, and continues to attract supplementary funding for special related projects. The library provides all technology and expert support for digitizing and making globally available journals and digital products by faculty and departments. Additionally, the library provides a menu of services for potential authors to choose from, including peer-review management systems, collaboration platforms, and support for multimedia and data sets. The digital publishing program uses both open access and proprietary approaches *and overlaps with the institutional repository and print on demand services*. The library is fully enmeshed in the life cycle of scholarly publishing. The driving forces are the library *and academic leaders intending to expand their role* in the scholarly publishing process--shifting from providing access—to creating and managing content, *as well as the need for efficiencies of process in publishing*. In essence, the library is redefining its role on campus as publisher *and exploiting the opportunity to bring together an efficient way of handling scholarly publishing*.

b. This version is similar to option a, *but includes a* successful open access model and university-wide policies established by administration to address governmental mandates *in the humanities and sciences* to make research more widely available to the public (historically begun with the NIH 2008 public access mandate). Under this model *the university uses a template created by a library association, negotiated with any external publishers, and used at many other peer institutions, which gives institutions the right to retain a copy of every affiliated authors' works, whereas 15 years prior, each article needed to have an author rights amendment attached.* Like scenario a, the library is fully enmeshed in the life-cycle of scholarly publishing and *librarians have specific customized skills for each academic area.* The driving force is the Federal government's mandates to provide research findings to the public and the library leadership's effectiveness at working with senior administration to come up with an enterprise-wide solution (policy) to operationalize open access and scholarly publishing of faculty research. In this version, similar to version a, the library is redefining its role on campus as publisher. Through this process, the library *is beginning* to define its role in research in new ways.

c. Publication in peer-reviewed journals continues to be the record for scholars in the academy and includes the best thinking and highest quality of production and review, as well as fine artwork and illustration. Working more closely with the affiliated University press, the library helps with related editorial development and production but does not publish official scholarship. Rather, the library helps to advance scholarly communication of faculty by making working papers, technical reports, pre- and -post white papers and grey literature internationally accessible. Although not as central to the core as version a, the library reallocates resources and reinvents positions for digital publishing and continues to attract supplementary funding for special related projects. The library provides technology and expert support for digitizing and making globally available the types of documents listed above by faculty and departments. The driving forces are the long-standing history and respect for peer-review and publication as it relates to tenure and promotion for faculty and the library's understanding and desire to support faculty and the academic mission, by working with university presses to *further develop* the scholarly publishing process. This is accomplished by *seizing* the opportunity to create, manage, and provide access to scholarly communication content that university presses were not providing.

d. *Similar to a. but includes an organized global library and institutional effort supported by academic leaders worldwide. Participating higher educational institutions, scholars, and librarians will create this new global approach to scholarly publishing that ensures the highest quality peer-review. The driving forces are scholars' interest in global recognition, as well as library and academic leaders expanding their role in the scholarly publishing process. In this version, the library is redefining its role in scholarly communication on a global scale.*

Scenario Five (Failure to Succeed)

Open access models *are not sustainable* and scholarly publishing *does not advance. The majority of publishing is for-profit. The library budget is not able to match publisher price increases.* The library faces tough negotiations in order to gain access to the information resources faculty, students, and researchers use daily in pursuit of teaching, learning, and research.

The driving force is faculty resistance to open access journals. Faculty *fear the peer-review system will collapse,* and the culture and long history of tenure being linked to publishing in high impact journals, *causes faculty to work around the library.* Faculty develop relationships with publishers *based on their discipline to preserve the quality ensured by the* peer-review process. *These relationships are* supported by both the institution and the publisher. Publisher consolidations have resulted in a few publishers holding all the power. *Publishers form new alliances to develop the tools faculty need to speed-up the publication process; the library is not part of this process.* The library is unsuccessful working with administrators or faculty to advocate for alternative publishing models.

Scenario Six (Alignment of Pedagogy with Practice)

The library collaborates with a local library science program in assuming a leadership role for teaching scholarly communication courses for graduate students. The course, taught by librarians currently working in academic libraries, is designed to give students the opportunity to investigate scholarly communication issues from a university perspective with Library Science theory and practice. The Institute of Museum and Library Services supports the new scholarly communication library program for Library Science research by providing funding for collaborative projects. Students are paired with tenured librarians in local academic libraries. Together, they *are given the opportunity to work directly within identified subject areas to complete research projects, some that include collaborations with faculty in other fields, including submission for publication. Students are introduced to various scholarly publishing venues with opportunity for multiple submissions and presentations.*

The driving forces in this scenario are leaders from both academic libraries and library science programs who collaborate to prepare students to be successful in this complex arena.

Discussion

Director comments from Phase One and Phase Two can be grouped into the following categories: multiple scenarios; alternative scenarios; the library's role in publishing; the economy as a driving force; the need for collaboration; not going far enough; desired futures versus likely futures versus aspirational futures; and complex environments.

Multiple Scenarios

Forty-five percent (n=9) (See Chart 2 above) of the directors chose a combination of two or more scenarios, indicating that no one scenario matched their future vision. Comments from these directors included the following statements: from Director 15, "The scenarios are not mutually exclusive of each other," and "Some percentage of these will happen, just a matter of how quickly," and from Director 13, "If I choose one then I am missing out." Director 1 read the sequence of scenarios presented as providing an increased response to the same problem. Some directors [1, 7-9, 11-13, 15, and 16] commented that parts of each scenario might be applicable depending on size and type of library. In addition, participants expressed the opinion that libraries need to be involved in multiple areas in order to meet the needs of faculty, researchers, and students, all of whom are involved in scholarly communication issues to varying degrees. Director 15 pointed out that not every university has a press with which the library can partner, yet a library may still want to be involved in some type of publishing in the future as part of its scholarly communication program. With 13 of the directors selecting Scenario 4, this indicates that 65 percent of the directors interviewed see the library in 2025 as having a role in campus publishing. This is followed closely by 12 directors (60 percent) who selected scenario 3, indicating that the future role for the library is forming strategic partnerships with faculty, researchers, and students and assisting with data management and preservation.

One of the strengths of scenario planning is the ability to generate multiple futures that can be used to facilitate discussion and debate.[34] In addition to the 11 scenarios that came out of this study, the ACRL Futures Scenarios identified 26 other scenarios some of which contained aspects of scholarly communication, including print-on-demand, open access learning tools, distance education, continued publication in traditional peer-reviewed journals as the norm, and libraries not making headway in scholarly publishing and not being able to compete with information competitors.[35] Choosing multiple scenarios may be reflective of uncertainty as to what the future brings in a rapidly changing environment or a desire to not miss out on any possibility.

Alternative Scenarios

The directors all believed the scenarios were relevant and that portions of them accurately portrayed the directions in which libraries were headed. However, six directors suggested additional scenarios.

The directors all believed the scenarios were relevant and that portions of them accurately portrayed the directions in which libraries were headed.

Creation of library as publisher that includes an open access model, Scenario 4B

Director 10 affirmed strongly that open access was the only way to go and that university-wide policies continue to support governmental mandates. Several other Phase One directors did not believe this to be the case, so a separate version of scenario 4 that focused on open access to address governmental mandates was created (4B). As mentioned earlier, the NIH mandate provides libraries with an opportunity for further faculty engagement.

Creation of library as publisher for non-official scholarship, Scenario 4C

Director 8 suggested scenario (4C) because she did not believe that scholarly presses will disappear, unlike some of her peers: "publication is the record, the best thinking, and includes quality of production and review such as artwork and illustration." She acknowledged that researchers need help with editorial development and production but that the long-standing structure of peer review in scholarly publishing as it related to academe will not change. She hoped that libraries became involved in the management of scholarship. This director recognized that online scholars are having vigorous open dialogues about new ideas long before publication in peer-reviewed journals. Similarly, Director 6 maintained that even if libraries can publish scholarship operationally (and she believes they can), libraries will not be able to change the culture of how the journal system works to establish legitimacy within a discipline. "Publishing in prestigious, established journals is that which gives faculty credit toward tenure. Scholarly communication requires the established journals to proclaim this is quality." Director 6 also pointed to the concern that when aligning a library institution closer with a university press, the potential exists for perceptions to develop that the university press has turned into a vanity press, and thus may allow bias toward the university to develop. Scenario 4C was created based on comments such as those of Director 6 and Director 8 and to focus on publishing white papers, grey literature, dissertations, and technical papers (material that did not try to replace the types of materials required for tenure). This expanded role for academic libraries and their parent institutions is part of the transformation of scholarly publishing.[36]

Online scholars are having vigorous open dialogues about new ideas long before publication in peer-reviewed journals.

Creation of library as global publisher, Scenario 4d

Director 14 thought that libraries' roles in publishing will be more collaborative and global in the future, believing that if libraries join forces, the possibility exists to change the infrastructure associated with publishing and still retain a robust peer-review system. Globalization is mentioned in the Future Thinking for Higher Education Report: faculty come from all over the globe, universities will be online, and students select classes from various educational institutions. The scenario "library as a global publisher through collaboration" follows this global theme. As Director 14 and the ITHAKA Report point out strategic partnerships are critical—this includes the library, university presses, and faculty working together to deliver new modes of publishing.[37] This scenario ties the importance of collaboration to globalization through an organized approach.

Creation of failure to succeed, Scenario 5

Director 10 believed that it was possible that by 2025 open access could fail completely. Director 10 acknowledged that while this was not the current situation, given the input of other players (publishers and university faculty) the potential existed. This scenario was proposed in Phase One and shared with the directors in Phase Two. When asked about the scenario, Director 15 thought that this scenario described the present status, whereas Director 19 thought this future was unlikely, given the fact that numerous publishers already give faculty permission to post works in their home institutional repositories. Still, Director 14 could imagine such a future, stating that an entity besides the library steps in to provide the infrastructure needed for scholarly communication. All of the Phase Two directors commented on Scenario 5, indicating the seriousness of such a future and the issues it would raise for library directors. As is true of the scholarly community at large, the participants in this study shared mixed opinions about whether or not OA thrives.

Alignment of pedagogy with practice, Scenario 6

Director 19 from the Phase Two interviews, realizing that librarians need a new set of skills in order to be effective in advocating for changes in the scholarly communication process and assuming new roles, preferred library and information science programs to assume a leadership role in training future librarians in newly identified skills (data management, curation, and preservation, as well as greater knowledge of the publishing industry). He suggested an additional scenario (Alignment of Pedagogy with Practice) to address these needs. This requires libraries to work directly with library and information science deans to shape the curriculum and to prepare students to work in any of these scholarly communication scenarios. This need to develop new abilities is an opportunity to set the future of library schools to incorporate new

This requires libraries to work directly with library and information science deans to shape the curriculum and to prepare students to work in any of these scholarly communication scenarios.

curricula specifically designed to prepare librarians with well-honed scholarly communication skills in line with the publishing process, and "this may be a once in a century opportunity to convince those in power that the field has a real contribution to make."[38]

The Library's Role in Publishing

The participating directors, for the most part, consider that the library should participate in publishing but that there was a disparity of opinion of what that means and to what extent. In addition to the position that libraries should assist with related activities but not publish peer-reviewed journals, as noted in the Alternative Scenario section, two other roles envision publishing as becoming central to the library's work and providing infrastructure support.

The participating directors, for the most part, consider that the library should participate in publishing but that there was a disparity of opinion of what that means and to what extent.

Central to the library's work

Four of the directors [4,5,9,12] were of the opinion that libraries should be in the business of scholarly publishing—two believed it should be central to the work of a university library [Director 5] and that support for the program should be built into the budget rather than being dependent on external funding [Director 4]. Director 15 stated that libraries have no knowledge of running presses and should stay away, pointing out that "libraries think publishing is easy; it is not. It must be sustainable and high quality. [Libraries] need a better understanding of what publishing is." Success comes with the ability to add "intellectual value on top of raw text."[39] Providing this value is a new area for many ARL libraries; it may take time for library staff to acquire the necessary skills and be recognized as experts in this area.

Provide infrastructure as a supporting partner

Two directors [Directors 9 and 12] thought the library should be focused on publishing technology but not necessarily in a leading role: Director 9 stated "Libraries provide infrastructure but not intellectual leadership, … [the] library has a role in technology, not necessarily leadership—it has to be case-by-case." Director 12 expressed the opinion that the focus of academic libraries should be on service. The focus on service and partnering with information technology leaders on campus was highlighted in a set of interviews conducted by Leigh Estabrook, who found that "They want a librarian with a service orientation who sees and understands the need to work with not only faculty and students but also with information technology specialists: someone who is effective in both collaboration and communication."[40]

Although there was no agreement on exactly what role the library assumes in publishing in the future, there was a strong sense among the majority of directors that the library has a role in suggesting new models, and coordinating experimentation with new technologies and formats. These roles were also suggested by Wittenberg.[41]

Economy as Driving Force

Several comments [Directors 2,4,7-9,13,15,18, and 20] were made about the economy as a driving force. The influence of the economy on scholarly communication was discussed throughout the interviews. Director 9 saw the economy as a "major force," adding that "current models of publishing are not affordable." Director 18 remarked that the 30 percent and 40 percent journal increases of the recent past are just that, a thing of the past; adding that the journal inflation rates for their campus had not even kept up with the most recent tuition increases.

Director 15 commented that there is always some sort of constraint and that journal inflation is an issue in both good and bad times. Echoing this sentiment, Director 4 noted that the economic recession is being used as a crutch and asserted that some libraries are so tied to traditional roles that the economic downturn has been used as the excuse for not adding new services. He felt that libraries "should take advantage of positive opportunities during an economic downturn to review traditional roles that might be holding the institution back from moving into emerging models of service."

There was an overall recognition that the health of the economy be taken into account when managing change and planning for the next stages of scholarly communication, but no clear answer as to what extent.

There was an overall recognition that the health of the economy is taken into account when managing change and planning for the next stages of scholarly communication, but no clear answer as to what extent. As seen in the literature as well as participants' comments, the economic downturn has triggered conversations nationally and library leaders are discussing the varying needs of libraries.

Need for Collaboration

The majority of directors [Directors 1-4,6,9,11-15, and 20] commented on the need for collaboration in each of the scenarios. Partners identified for potential collaboration include administration, faculty, students, researchers, associations, and library consortia. Libraries have to work in concert with these other players and as part of their parent institutions. Director 13, for instance, said "collaboration will be heightened in the next few years," and Director 14 pointed out "we must join forces." Both directors identified issues associated with collaboration, such as time, skill, and acceptance. When talking about scenario 3 (Librarians Role Reinvented), directors questioned whether or not li-

Partners identified for potential collaboration include administration, faculty, students, researchers, associations, and library consortia. Libraries have to work in concert with these other players and as part of their parent institutions.

brarians have the skills needed to be full partners in the research process. Director 6 said this is an opportunity to reemphasize the role of the librarian as having subject expertise and to de-emphasize the generalist trend. These directors view collaboration as a strategy for gaining buy-in and backing, cost-sharing and finding new opportunities for new revenue streams, engaging faculty, and affirming library expertise.

Not Going Far Enough

Fifty percent of directors commented that the future scenarios are too conservative [Directors 1,4-6,12,13, and 17] or not innovative enough [Directors 4,13, and 17], believing many of the issues raised to be addressed within five years or fewer [Directors 4,5, and 8]. Six directors [Directors 1,12-15, and 20] believed the scenarios described the current status and two described the scenarios as "retro" [Director 10] and 'beyond" [Director 17], stating they described issues libraries already addressed. Director 6 observed that "[the scenarios] seem to be subtle changes around the edges rather than a major transformational shift." None of the directors, however, offered any radically different scenarios.

Likely Futures Versus Desired Futures

Director 8 pointed out that the future scenarios could be taken in two ways: likely possible futures or desired futures. She described these perspectives as "The future that may arise versus the future where libraries may want to live." The final scenarios were intended to capture possible futures that directors could envision. The tension between desired futures and perceptions of value is not unusual in "futures" studies. For example, the recent ACRL *Futures Thinking for Academic Librarians: Higher Education in 2025* stated, "... Several ACRL leaders have indicated it is not enough to know the current state; we must also know what will be valued in the future and draw implications so that librarians can begin to take appropriate action now."[42] One research question addressed favored scenarios, however, as Director 8 highlighted, the study did not specifically probe the question of desired futures versus likely futures.

Complex Environments

Some directors [Directors 8,13,15,16, and 17] also said that the scenarios did not capture the complexity of the environment in which libraries operate and the perspective of all those involved: university administration, faculty, students, and publishers. Multiple directors [8,9,14,15,17] commented that the scenarios were very library-centric. As Director 8 put it, "scholarly communication is much larger than libraries, so it is quite difficult to talk about the role of the library in a vacuum." CLIR, and Brown, Griffiths, and Rascoff, and Thomas, have identified some of the leadership skills, emphasizing collaboration, needed so that libraries develop into active, equal team members in the ever complex scholarly communication field.[43]

Limitations of the Study and Areas for Further Research

The use of scenarios has a potential for lacking diverse input and viewpoints, confusion concerning roles, and possible inability to describe new and dynamic stories including strategic options; directors in the Complex Environments section above identified at least two of these components. Mietzner and Reger suggest it may be necessary to combine scenario planning with other future methods, such as Delphi or roadmapping techniques.[44] The scenarios are grounded in a complex setting involving at least three different players: publishers, faculty authors, and library directors. Due to time, resources, and logistics, the authors only consulted one group—US-based ARL directors with significant documented experience in scholarly communication which may have resulted in futures that are not applicable to foreign libraries or libraries that have little experience in scholarly communications.

Future scenario studies might take into account the following: for-profit publishers; university faculty representatives from multiple disciplines; university administrators; information service professionals; and libraries of other types, sizes, regions (including international), and subject focus. Further exploration could include future scenarios with various scholarly communication cost models, including open access, and explore how these potential models affect the role of the library. And lastly, as suggested by one ARL director in Phase Two, further research could examine what graduate programs in library and information science are doing to prepare current students to participate in scholarly communication activities in the professional realm.

Conclusion

Library directors face challenges daily to approach library management issues from multiple perspectives for both today and the future. Future scenarios are used by leaders to explore different approaches for addressing the future, and "reorient our thinking."[45] This research project asked research library directors to think about the potential challenges facing libraries and the future roles they will play in scholarly communication in higher education and at their local institutions. As a next step, library directors may want to focus on planning to achieve scenarios they desire or on preparing to handle specific scenarios or subsets of scenarios that may occur. The potential utility of the scenarios for individual libraries depends on the application of the possible, plausible, or aspirational futures question posited by one participant, while taking into consideration the local environment in which the library is set.

Changes in scholarly communication practices in research libraries are moving fast with all participants already actively engaged in defining the library's role in scholarly communication and believing it is a critical issue. While differences in opinion exist on how to address this issue, this study's findings indicate that the changing landscape of research, open access, data mining, and managing information and intellectual property rights has added urgency to the need to define the library's role in scholarly communication. A key factor that impacts the success of the changes in scholarly communication programs is collaboration; bringing diverse groups together was highlighted as an important skill for libraries that hope to have a role in future scholarly communication practices. The ITHAKA Report "found considerable interest in cross-institutional collaboration, and a feeling that some third party 'glue' is needed to make this happen."[46] The necessity of collaboration came up in many of the interviews and all of the possible futures. It is critical that libraries continue to work within their institution along with stakeholders and with partner institutions to create a new scholarly communication structure and cultivate a prominent role in the new model.

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APPENDIX TWO

Scholarly and Creative Activities

Publications

Brief Description:

- Martin, C. K., Maxey-Harris, C., **Graybill, J.O.**, & Rodacker-Borgens, E. K. (2009). Closing the gap: Investigating the search skills of international and US students: an exploratory study. *Library Philosophy & Practice, 2009.* 1-17
  REFEREED

My Role:

I wrote and submitted the initial grant proposal to the ALA Office for Diversity, Research Grant Program in 2006 which funded the research project. I participated in the development, implementation, writing, data analysis, editing, and formal presentations as a collaborative partner with Charity Martin, Charlene Maxey-Harris, and Elizabeth Rodacker-Borgens.

Specifically, I participated as a team member assuming responsibility for particular identified segments of the research process and subsequent writing as well as establishing and adhering to deadlines.

Significance/Impact:

Total Number of downloads since publication: 154

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Closing the Gap: Investigating the Search Skills of International and US Students: An Exploratory Study

Charity K. Martin
Technical Services Librarian & History Liaison

Charlene Maxey-Harris
Diversity Librarian

Jolie Ogg Graybill
Digital Media Librarian

University Libraries
University of Nebraska-Lincoln
Lincoln, Nebraska

Elizabeth K. Rodacker-Borgens
English/ESL Professor
Bakersfield College
Bakersfield, California

Introduction

Academic librarians are increasingly concerned about students' information literacy. The ability to effectively search academic resources is critical to academic success. In the past 10 to 20 years, the most significant change in patrons' library skills is related to the introduction of new technologies. Rapidly changing technology affects how students search for information and, in turn, influences how academic libraries serve students. International students, especially those who learned English as a second language, often struggle to use the library more than their American counterparts. To help international students understand the many facets of academic libraries (such as the academic culture, services, and resources), library programs and services have been developed to meet international students' informational needs. Although the population of international students is on the rise, research on international students' ability to search library resources is limited.

Previous studies have indicated that there are significant differences between the library skills of international students and those of US students. This exploratory study examined the ability of undergraduate and graduate international students to identify books, journals, and journal articles and compared it to a small control group of US students. The number of students was limited by a $1,500 American Library Association Diversity Grant. It was expected that, even with a small sample size, that international students' library skills would lag behind those of US students.

This research design was patterned after Zoe and DiMartino's research on end-user international students in the 1990s. In the 90s, considerable time was spent teaching students how to search for information in end-user databases. Libraries were moving from searching by librarians to systems which allowed users to find their own information. Today is it possible to collect data on searching, using software that records the user's interactions with the computer, often called keg-logging, or tracking software. Using tracking software in this study allowed analysis of how students acquired their answers and comparison of the results of international and US students. This method differs from the other studies which used surveys to determine how international students find information and what resources are used. An exit survey provided demographic information about students, such as frequency of library use, satisfaction with library services, and prior computer use in their countries of origin. The implications of the study can be used to improve library instruction and online catalog records to increase accessibility for all students.

Literature Review

The number of international students attending American universities has increased each year. According to the *Open Doors Report* [1] , the international student population has increased 3 percent, totaling 582,984 for 2006/2007 alone. *Newsweek* [2] reported that, according to the US Commerce Department, international student education is a $13 billion boost to the economy. The article also noted that the number of international students studying in American colleges and universities has been on the rise. The Institute of International Education ranks these students' presence as having the fifth greatest impact on our economy. Because of the economic impact, services to international students are also on the rise as universities and colleges develop more partnerships with other countries. Libraries need to be involved in the planning to create opportunities for success for this important group of students.

Much of the literature of the last 20 years provides methods for improving library orientation and instruction sessions to culturally diverse library users—both minority and international students. Articles focused on cultural and language differences and characteristics librarians need to be aware of to provide culturally responsive service to international students.[3] During the 1980s, the greatest barriers for international students and librarians included language, cross cultural communication, comprehension of library terminology and concepts, technology, and Western library practices in general.

Some key articles written in the 1990s changed the way libraries approached identifying specific skills and types of information collected from international students. Prior to the 1990s, research focused on librarians' lack of understanding of international and multicultural students' diverse needs. However, research by Allen, DiMartino, and Liu concentrated on making connections between students' skills and how they searched for information. Allen not only examined how students used online catalogs and other services, but also asked students about the use of computers in their countries of origin. [4] She also obtained data about difficulties students experienced because of unfamiliarity with library services in the US.

DiMartino and Zoe examined how multicultural students and international students used databases after training on a full-text database. [5] Gender, anxiety, and ethnic background were variables examined in determining the success of information searching. One hundred and thirty-one graduate students were trained to use Lexis/Nexis, prior to the web version Academic Universe, and completed a survey about the search strategy used, the satisfaction with the results, and past searching experience. The authors concluded that most students were challenged in developing search strategies because of the language barriers. The most significant difference between the ethnic groups was the level of satisfaction of the results—native English speakers reported more positive results than other groups.

Liu and Redfern surveyed multicultural students to identify the characteristics of successful information seeking behaviors in the library. [6] Students experienced more success using the libraries with length of stay in the US, frequency of library use, and comfort level in asking for assistance. Natowitz reviewed the literature and summarized trends and concerns of academic libraries serving international students.[7] Recommendations for cultural awareness and sensitivity of library staff, collaboration with ESL language departments, and understanding learning styles of ethnic groups were stressed again and again. Collaboration with English as a Second Language (ESL) instructors is a best practice for assisting students in breaking down the barrier of library terminology and bridging the gap of cultural values, information, and language.

Recent articles have explored comparisons between international and American/domestic students use of information and services.[8] Pamela Jackson's 2005 study surveyed 161 incoming undergraduate and graduate international students about new library services and terminology, library computer experiences and computer skills, and services or information libraries should provide to the incoming class.[9] New library services or unfamiliar concepts to the students included interlibrary loan, consulting with librarians, and virtual or online reference services. The results showed 84 percent of international students come to this country with higher levels of computer skills and computer use in their home countries than previously. The computer technology barrier identified in the 1980s and 1990s is no longer a major obstacle for students in finding and using information, although libraries need culturally responsive programs and services for international students.[10]

The most recent research on international students was a 2005 user survey at Virginia Tech University, conducted by Liao, Finn and Lu.[11] The authors compared the ways international and American graduate students begin seeking information and the resources used to find information. All graduate students were given the opportunity to participate, and 315 responded: 71 percent American and 29 percent international students. The survey instrument combined the information seeking behavior questions of Liu and Redfern with the difficulty of using library services explored in Allen's research. Overall, the results “demonstrate that international students use libraries much more actively and often than American students during their graduate studies.”[12] The data also showed international students were more confident in their English language proficiency and understood most of the library terminology and concepts. [13] Over the past 25 years, the major obstacles of technology and English proficiency have been reduced and do not affect a majority of international students, although libraries must still be responsive and provide instruction that emphasizes information competencies.

Subject Parameters

This study took place on the campuses of Union College, a small private liberal arts college with an international student population of 6 percent, and the University of Nebraska-Lincoln, a public research institution with an international student population of 7 percent. To participate, students had to be at least 19 years old and enrolled in one of the two institutions where the research was conducted. Since the focus of the study was on international students, it was decided the majority of the subjects should come from that group and to use a smaller group of US students as a control group. This resulted in two-thirds international student subjects and one-third US students. International students had to have reported passing the TOEFL to be included. For the purposes of this study, international students were defined as students from countries outside the US, and US Students are those US citizens who speak English fluently.

Recruiting Methods

Two recruiting methods were used. First, flyers were placed on announcement boards in the two student unions, the libraries, various residence halls, and ESL offices. Second, a message describing the study and inviting participation was sent to student listservs. Of the two methods, the listserv message garnered the greatest response. As an incentive to participate, subjects were informed that they would receive a $25 gift card to the local Target store for their participation. Students were instructed to contact one of the researchers who conducted a short oral interview to ensure students met criteria for the study and assigned a time for students to complete the study. During the study, walk-ins were also allowed to participate if they met the criteria.

Methodology

The study was conducted in the library computer lab at each institution. Given the potential of Total Spy, a key-logging tracking software, to be a violation of the subject's privacy, it was important the research design be reviewed and approved by each institutions' human research review board. The University of Nebraska-Lincoln's Institutional Review Board and Union College approved the methodology. This study was designed so that the only identification of a subject was an ID number assigned to the exercises. In order to protect each subject's privacy, nothing on the signed consent form linked the student with the identifying number on the exercise form, results from the tracking software, or the questionnaire.

Before participating, each student participant received an informed consent release form. This form explained the purpose of the study, how the information was gathered, what was required of the student and any potential participant risk. Each potential subject was also asked orally if they had any questions and reassured that they could ask questions at any point of the study. After signing the release form, a copy was given to each student who agreed to participate.

Each student received an exercise form (see Appendix A) to complete and shown to a computer with tracking software installed and already open to the library's home page at the student's home institution. The software provided information about each student's session. The software was selected because of its capacity to capture webpages, URLs, and keystrokes in a variety of intervals. Students were reminded not to check email or perform other functions on the computer during the study. After completion of the exercise, information was collected in electronic folders named with the participant identification number.

The exercise consisted of two parts. (See Appendix A). Part one was a series of questions to see how well they navigated and understood their home institution's online catalog. There were five questions asking the student to find books and journals on the online catalog. Some questions asked them to identify the “available” books to check out, others asked the number of copies of a book, (e.g., *Huckleberry Finn*), while another question asked them to list the title and the call number of a book. There was one multi-part question on journals, e.g., "does your library own the *American Historical Review* " and "what is the most current issue?" The exercises were designed to build confidence with simple questions before moving on to more complex information.

In part two, students answered questions using the *Academic Search Premier* (ASP) database. This database was chosen because of its frequent use at both institutions and its broad-based coverage of multiple academic disciplines. The ability to properly cite and identify a peer reviewed, or scholarly article, from ASP were library skills focused on during the study. This section had three questions with several components within each question. For example, “how many articles can you find on Sunni and Shi'ite Muslims?” The follow -up questions asked students to record a citation, underlining the journal name and circling the issue number. The final question required students to identify peer-reviewed articles about Willa Cather.

Upon completion of the searching portion of the exercise, students were given a short exit survey to gather basic demographic information, their satisfaction and comfort level with the exercise, and their use of library's resources. (See Appendix B). After completing the survey, the student received their gift card and was free to leave.

After the data gathered by the tracking software was saved by the researchers, all information from the subject's searching was purged and the computer set up for the next subject to use. The data gathered by the tracking software included the amount of time each subject spent on parts 1 and 2 of the exercises, the URLs used, and screen shots taken every minute during exercise. Although the software collected an abundance of data, the most useful information was observing how much time the student spent on the total exercise, the screen shots, URLs, and keystrokes. Data analysis focused on the basic search techniques used in finding scholarly articles.

Results

Subjects

Sixty-nine students participated in the study, 46 international students and 23 US students. One US student did not complete the exercise, making the final number 68, with 46 international students (68 percent) and 22 US students (32 percent). Fifty (74 percent) of the students were undergraduates and 19 (26 percent) were graduate students. The undergraduates included 53 percent freshmen and 21 percent upperclassmen.

Between the two campuses, students represented 18 countries: Brazil, Cameroon, Canada, China (including Hong Kong), Colombia, England, India, Indonesia, Japan, Kenya, Korea, Latvia, Mexico, South Africa, South Korea, Uganda, United States, and Venezuela. A majority (31) of international students were from China and other Asian countries.

Online Searching Results

All 68 students were able to identify the book requested in the online catalog search from the exercises. When identifying call numbers for books from the catalog record, 62 (91 percent) correctly listed a call number. Only 6 (9 percent) international students incorrectly identified call numbers, substitutin ISBNs and other numbers from the catalog record. This may indicate a problem with identifying Library of Congress call numbers or with library terminology. Ninety-one percent of international students were as proficient as US students at identifying call numbers; however, the numbers are too small to signify the problem is one of international status, terminology or library instruction at either of the two institutions.

When asked to interpret a catalog record for journals, all students encountered problems identifying the current issue and whether it was available in full-text. There was little difference between the two groups; both experienced limited success. Overall, 84 percent correctly recognized a full text version of the journal. On the other hand, 43 percent of international students and 41 percent of US students were unable to identify the most current issue of a journal by reading the catalog record. While the difference between the groups is negligible, it does indicate further study on the cataloging of journals is needed, as well as improved library instruction on interpreting journal records. This appears to have less to do with international or US status, but with how records are presented in the online catalog.

The second portion of the exercise focused on using ASP. All students but one could find relevant articles; however, when interpreting citations, there were some telling differences. Seventeen percent of international students did not record the complete article citation in ASP, compared to 9 percent of US students. Most listed the title of the article for the title of the journal. Of written citations, 47 percent of international students did not properly label the journal title and volume number, compared to 27 percent of US students. A Fisher Exact Test showed that the difference was not statistically significant (P-Value cutoff=.117; 1-tailed P-Value=.296). This discrepancy is an indication that all students struggle with interpreting database records, while international student may have a greater challenge. Again, library terminology maybe be responsible for this finding. Exit interviews showed that international students tended to have more experience using the library, so lack of familiarity with the library does not seem to be a factor in these differences.

The final challenge was to identify peer reviewed or scholarly articles. Based on the tracking software, only 40 percent of all students accomplished this basic task. Thirty-eight percent of international students and 41 percent of US students looked for scholarly articles. Clearly, these are dismal results for both groups. They point to a deficiency in library skills for all students, with little statistical difference between the groups.

Tracking Software

The tracking software used during the study yielded some interesting results on basic search strategies. Data was collected to see if there were significant differences between the average time spent on the exercise, limiting to scholarly articles, repeating a search, or using field tags in the search for articles on Willa Cather's life. Surprisingly, there was little or no difference between the two groups in time spent completing the exercise. US students' time ranged from 16 to 81 minutes, with an average of 37 minutes on the exercises. International students spent from 12 to 79 minutes, averaging 34 minutes, to complete the exercise. The difference between the groups was insignificant.

The software revealed students searching outside the library website for answers to the questions. Students had been given both oral and written instructions, telling which part of the exercise required the use of the online catalog and which part required ASP to answer the questions. The key-logger software showed 28 percent of international and 14 percent of US students attempted to use other sources to answer the questions related to the ASP portion of the exercise. Some tried to use the multi-search feature or the online catalog to find articles. Table 1 shows that the difference between the number of international students and the numbers of US students who looked at resources other than ASP is significant with a Pearson's Chi square of .004. The difference between the two groups may indicate a language barrier or confusing library terminology. Responses from the exit survey also showed confusion with completing the exercise.

Table 1: Looking at resources other than ASP			
	International Students (n=46)	US Students (n=22)	total
Looked at sources other than ASP	15	7	22
Only looked at ASP	31	15	46
Total	46	22	68
Degrees of Freedom=1	Pearson Chi-Square Statistics = .004	P-Value = 0.9480247607118629	

The software also revealed that international students were slightly more likely to repeat a search in ASP than US students. On average, international students repeated the search 2.98 times and US students repeated the search 2.52 times. Given the small sample size, this is well within the realm of natural variation. It appears that international students were not confident that they had completed the task successfully and, although they repeated the search slightly more often than US students, they used other search strategies before settling on an answer.

Since the query was straightforward, search strategy results were basic. Given the improvements in database interface, an elaborate search strategy for basic searches is no longer necessary. However, 21 percent of students (20 percent of international and 23 percent of US students) used field tags such as (ti) title, (so) source, (su) subject, (pe) people, (au) author, in ASP to qualify the original search terms. The most common field tag used was subject.

Figure 1: Keystrokes and URLs: Total Spy examples

---> 1:02:34 PM, IN WINDOW "UNL | Libraries - Microsoft Internet Explorer" USER "Public" PRESSED:
eastern religion -Enter-

---> 1:06:20 PM, IN WINDOW "UNL | Libraries - Microsoft Internet Explorer" USER "Public" PRESSED:
eastern religion -Enter-

---> 1:06:25 PM, IN WINDOW "UNL Libraries & Schmid Library - Microsoft Internet Explorer" USER "Public" PRESSED:
-Delete- IndiaHuckleberry Finn -Delete- -Back- -Back- -Back- -Back- -Back- -Back- -Back- -Back- -Back- -Back- -Back- -Back- -Back- -Back- -Back- -Back- American Historical Review -Enter-

---> 1:06:26 PM, "http://library.unl.edu/search/","UNL Libraries & Schmid Library"

---> 1:08:51 PM,
"http://library.unl.edu/search/?searchtype=X&searcharg=India&sortdropdown=-&SORT=A&extended=0&SUBMIT=Search&searchlimits=&searchorigarg=Xeastern+religion%26SORT%3DA","http://library.unl.edu/search/?searchtype=X&searcharg=India&sortdropdown=-&SORT=A&extended=0&SUBMIT=Search&searchlimits=&searchorigarg=Xeastern+religion%26SORT%3DA"

---> 1:08:52 PM,
"http://library.unl.edu/search/?searchtype=X&searcharg=India&sortdropdown=-&SORT=A&extended=0&SUBMIT=Search&searchlimits=&searchorigarg=Xeastern+religion%26SORT%3DA","UNL Libraries & Schmid Library"

---> 1:09:11 PM,
"http://library.unl.edu/search/XIndia&SORT=A/XIndia&SORT=A&extended=0&SUBKEY=India/1%2C11503%2C11503%2CB/frameset&FF=XIndia&SORT=A&1%2C1%2C","http://library.unl.edu/search/XIndia&SORT=A/XIndia&SORT=A&extended=0&SUBKEY=India/1%2C11503%2C11503%2CB/frameset&FF=XIndia&SORT=A&1%2C1%2C"

---> 1:09:12 PM,
"http://library.unl.edu/search/XIndia&SORT=A/XIndia&SORT=A&extended=0&SUBKEY=India/1%2C11503%2C11503%2CB/frameset&FF=XIndia&SORT=A&1%2C1%2C","UNL Libraries & Schmid Library"

Exit Survey

After finishing the exercise, students completed an exit survey inquiring about their perceptions of the exercise and their library use patterns. When asked about their perceptions of the exercise, some striking differences became apparent. In Table 2, more than 50 percent of international and US students claimed to be familiar with this type of library research. Nevertheless, US students indicated more frustration and boredom with the exercises, while international students tended to see the exercise as more simple.

Table 2: Statements about exercises			
	Overall (n= 68)	International Students (n= 46)	US Students (n= 22)
I was confused	22 (32%)	14 (30%)	8 (36%)
I was frustrated	8 (12%)	3 (7%)	5 (23%)
These were simple exercises	28 (41%)	20 (43%)	8 (36%)
I was bored	4 (6%)	1 (2%)	3 (14%)
I did not understand what was being asked	9 (13%)	5 (11%)	4 (18%)
I am familiar with this type of library research	36 (53%)	24 (52%)	13 (59%)

Students were also asked about their methods of seeking assistance in the library. Both groups reported similar frequency in using their institution's library (between 2-3 times per week) and in asking for help in using library resources. There were differences in how the two groups ask for help from library staff. (Table 3) Approaching the reference desk is still the primary way of asking for help, with 86 percent of students responding to this venue. However, international students are much more likely to use a variety of communication methods to seek assistance, such as chat and email.

Table 3: Methods of asking for help			
	Overall (n=68)	International Students (n=46)	USStudents (n=22)
Reference desk	59 (86%)	40 (85%)	19 (83%)
E-Mail	5 (7%)	5 (11%)	0 (0%)
Telephone	15 (22%)	9 (19%)	6 (27%)
Chat	7 (10%)	5 (11%)	2 (9%)
Appointment w/ Librarian	3 (4%)	2 (4%)	1 (5%)
Other	5 (7%)	5 (11%)	0 (0%)

International students reported using the online catalog and journal databases more frequently than US students and with more variety in their frequency of use. As Table 4 shows, there is a significant difference in reported use of the online catalog and journal databases between international and US students. International students used these online resources more than US students. Liao's 2005 studies validate this finding. This was the only significant difference in self-reported use of library resources.

Table 4 Self-reported use of Online Catalogs and Databases					
Online Catalog					
	Daily	Weekly	2/3x Month	1/3x Semester	Seldom/Never
US Students	0%	18%	32%	36%	14%
International Students	7%	44%	17%	17%	15%

	US Students	International Students	Total		
Average Score	3.45	2.1	3.45		
Standard Deviation	1.2	1.2	.96		
T-value=-4.99 probability=.000004					
Journal Article Databases					
	Daily	Weekly	2/3x Month	1/3x Semester	Seldom/Never
US Students	0	5%	33%	48%	14%
International Students	13%	33%	26%	8%	20%
	US Students	International Students	Total		
Average Score	3.55	2.8	3.1		
Standard Deviation	1.2	1.3	.76		
T-value= -2.988 Probability=.002021					

Both international and US students claimed similar comfort and satisfaction levels in using library resources. Satisfaction with library resources was ranked 2.4 for all students, (1 being very satisfied and 5 being very dissatisfied). This mediocre score may not be as surprising when combined with the reported frustrations in using library resources. The primary frustration for both groups was "item is not in the library". (Table 5) The second reason for US students is "don't know where to start to look for info" and for international students "cannot find item". International students may experience more frustration in locating materials on the shelf because of their higher frequency of use. Since International students report using library resources more often than US students, the likelihood of encountering missing books or journals is higher. Based on other comments made by international students, the importance of library instruction in assuring that students have the basics of locating and finding items on the shelf and searching online databases become obvious. Other comments made by international students were:

- limited topics available;
- do not know how to limit search;
- NetLibrary is not convenient;
- too many journals; not sure which ones are the best
- cannot open the full-text of some journals;
- some issues are not available;
- cannot find full-text.

Table 5: Frustrations using library			
	Overall (n=68)	International Students (n=46)	US Students (n=22)
cannot find item	33 (49%)	22 (47%)	11 (50%)
cannot tell if book or journal is available	14 (21%)	8 (36%)	6 (27%)
the item is not in the library	39 (57%)	26 (55%)	13 (59%)
don't know where to start to look for info	19 (28%)	12 (26%)	7 (31%)
no one is available to help me	3 (4%)	3 (6%)	0 (0%)

US Students only made two comments: "difficulty finding what I am looking for" and "want resources online not physically in the library."

The final part of the exit survey was directed only to international students. They were asked about their use of libraries and library computers in their home country, which were divided into four geographic regions. Of the four regions, students from Europe, followed by Asia, had more access to libraries and library computers than students from Africa and the Americas. Students from Africa in particular were less likely to have experience with libraries and library computers before entering US universities. Seventy-eight percent used a library in their own country and 57 percent used library computers in their own countries. This finding is supported by Jackson's research, mentioning 84 percent of international students are using computers in their home country. (Jackson) [14]

Conclusion

Contrary to expectations, this exploratory study did not find that the library skills of international students were less developed than those of US students. Both the exercise and the tracking software showed that international students seek information in the same basic way as US students and the skills needed to find information is similar. It is important to keep in mind that due to the small sample size in this study, it would be imprudent to assume that the scales are equal. The purpose of this study was merely to ascertain if there was any evidence that international student's information seeking behavior skills in searching for basic library information in the catalog and for journal articles were still lagging behind those of US Students.

This research design was patterned after Zoe's research with multicultural students' searching behavior within a full text database. Recruiting US as the control group was based on the assumption that US students have more advantages to understanding and knowing how to use library service and resources than international student. In reality, US students were not a good control group, because of the small number and the variable characteristics of the group: undergraduate, graduate, public research institute, and private small college. The small sample size interfered with obtaining substantial significance between the international and US students, undergraduate and graduates, and between the institutions.

In the 90s, considerable amounts of time was used to teach students how to search for information within end-user databases. In comparison, today the database interface is more intuitive so users can find their way to the information they need. Therefore the complexity of the strategy is less important because of the design of the database interface. So it was difficult to compare the results of this study to Zoe & DiMartino's [15] research because of the type of database and the improved database interface.

A surprising finding that needs investigation is how students interpret records, regardless of their status or country of origin. This appears to be a concern especially with regards to journal records in the online catalog and article citations within a database. With more than 40 percent of all students struggling to interpret a journal record within the online catalog, it appears that this issue is not one of a language or cultural, but a more fundamental issue of the presentation of journals within an online catalog. Additional research on interpreting online journal records is needed to benefit all students. Although there was no significant finding between international students and US students, international students struggled more with library terminology or a language barrier while deciphering the online journal record.

The tracking software opened the door to observing student behavior in a structured way. Tracking software ascertained some search strategy differences between international and US students. Data collected was analyzed in more detail to identify the keywords, field tags, limit to peer review articles, and the number of repeated searches. The software provided a record of how the students searched for information. It was difficult to analyze much of the data because of the number of variables students used to get to the “correct” answer, the order of the search terms entered, etc. However, it was clear that international students were significantly more likely to use resources other than the designated ASP. This supports the finding that international students use a variety of information seeking behaviors to locate needed information.

A persistent, if not statistically significant, trend was revealed through the exit survey. US students were more likely than international students to see the exercises as confusing, frustrating, and boring, with the largest difference being reported levels of frustration. International students were more likely to see the exercise as simple and familiar. While this may not reveal any technological differences, it does indicate that attitudes and expectations of the students (perhaps molded by their culture) toward libraries and library research had an impact on perceived experience. The exit interview also revealed that US students were more likely to report a lower level of library experience and activity than international students. The only statistically significant difference between US students and international students was in the self-reported variety and frequency of use of library resources, with international students using more of these resources more often. The relationship between frequency of use and frustrations was also related to research dealing with anxiety levels of international students.

This study, though limited in number and scope, revealed international students use the library more frequently but still may need library instruction on the basics of library skills, such as finding a book on the shelf to identifying parts of a journal citation. Additional information about interlibrary loan, document delivery, and virtual reference services will reduce their frustrations when items can not be found in the library. Further study is needed to identify the best practices in the collaborative efforts of ESL and library instructors to create culturally responsive programs and services preparing international students for academic success.

Technology is closing the gap between undergraduate and graduate international and US students. Not only are international students coming from their countries using computers and libraries in their countries, the improvements in database user interface has reduced the need to understand library terminology which helps all students to navigate and achieve their research needs. In addition, the increasing use of technology in libraries and the willingness of international students to devote more time and energy to library research is helping to rapidly close the gap between international students and US students in using the library.

Notes

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4 Mary Beth Allen. "International Students in Academic Libraries: A User Survey." *College & Research Libraries* (July 1993): 323.

5 Lucinda R Zoe and Diane DiMartino. "Cultural Diversity and End-User Searching. An Analysis by Gender and Language Background." *Research Strategies* 17, (2000): 291-305.

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12 Yan Liao, Mary Finn, and Jun Lu. "Information-Seeking Behavior of International Graduate Students vs. American Graduate Students: A User Study at Virginia Tech 2005." *College & Research Libraries* no. 68 January (2007): 23.

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14 Pamela A Jackson. "Incoming International Students and the Library: A Survey." *Reference Services Review* 33, no. 2 (2005): 197-209 (accessed 8/8/2007).

15 Zoe, Lucinda R. and Diane DiMartino. "Cultural Diversity and End-User Searching: an Analysis of Gender and Language Background." *Research Strategies* 17, (2000): 291-305.

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Appendix A

ID #______________

Exercise Questions

End-User Searching: Comparing ESL Students and Native English Students

Search for books and journals in the online library catalog.

1. Find 3 books on Eastern religions. How many books are “available” to check out?

1. Find 2 books about your home country or state. What are the title and the call numbers and/or location and availability for each?

Book 1 ____

Book 2 ____

1. How many copies does your library have of the book, Huckleberry Finn , written by the author Mark Twain?

1. Is American Historical Review available in full-text from the computer? _____ Yes _____ No

1. What is the most current issue of the American Historical Review ?

Search for journal articles in Academic Search Premier

1. How many journal articles can you find on Sunni and Shiite Muslims using the Academic Search Premier database?

1. Write down the first article citation in the list. Then underline the journal name and circle the issue number.

a. Is the article available in full-text from the computer? _____ Yes _____ No

1. Do a new search looking for information about Willa Cather's life, limiting your search to scholarly (peer-reviewed) journals.

    1. How many articles did you find?

    1. What word or words did you use for this search?

    1. Which three articles would you use for a paper? (Below, provide the author's last name of the chosen articles.)

First article: author's name________________________

Second Article: author's name ____________________

Third article: author's name ______________________

Appendix B

ID#______________>

Exit Interview Questionnaire

End-User Searching: Comparing ESL Students and Native English Students

What is your home country? _________________________________

Gender: _____ Male _______Female

Age (circle one): under 25 26-29 30-34 35 +

What is your first (Native) Language? ____

What other languages do you speak? ____

How many years have you been in the U.S. ? _________

How many years have you been at Union/UNL? _________

Did you start at Union/UNL as a (circle one) Freshman Sophomore Junior Senior Graduate Student

What is your major of field of study? _________________________________

What is your degree objective? (Circle one) B.S. B.A. M.A. M.S. Other

In this study, how satisfied are you with your results of this study?

____Very satisfied

_____Somewhat satisfied

_____Satisfied

_____Somewhat dissatisfied

_____Very dissatisfied

Check all the statements that apply about the exercise

I was confused.

I was frustrated.

These were simple exercises.

I was bored.

I did not understand what was being asked.

I am familiar with this type of library research.

Other comments

On average, how often do you use the library at Union/UNL?

_____Never

_____Once a week

_____Twice a week

_____Three times a week

_____More than 3 times a week

Have you asked for help in the library? _____Yes _____No

If you have asked for help in the library, check the methods you have used _____ Reference Desk (in-person)

_____E-mail Reference

_____Telephone Call

_____Chat Reference

_____Appointment with a librarian

_____Other: ______________________

How comfortable are you using the library?

____Very comfortable

_____Somewhat comfortable

_____Comfortable

_____Somewhat uncomfortable

_____Very uncomfortable

How satisfied are you with this library's resources? ____Very satisfied

_____Somewhat satisfied

_____Satisfied

_____Somewhat dissatisfied

_____Very dissatisfied

On average, how often you use the online library catalog to find books, journals? _____Daily _____Weekly _____2-3 times a month _____1-3 times a semester/quarter _____Never/seldom

On average, how often do you use the journal articles databases to find journal articles? _____Daily _____Weekly _____2-3 times a month _____1-3 times a semester/quarter _____Never/seldom

What frustrations have you experienced? (mark all applicable responses) _____cannot find item _____ cannot tell if the book or journal is available _____ the item is not in the library _____ don't know where to start to look for info _____ no one is available to help me _____ other: ______________________________

_____ none

For International Students

Did you use a library in your home country before coming to U.S. ? _____Yes _____No

Did you use computers in a library before coming to the U.S. ? _____Yes _____No