Technology Competency Requirements of ALA-Accredited Library Science Programs: An Updated Analysis

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This study set out to provide an understanding of how LIS programs ensure that students are prepared for the demands of graduate study in the twenty-first century, how these expectations may have evolved since Kules's and McDaniel's previous 2008 study, and how various types of programs compare in their approaches. Content analysis was used to examine all 58 ALA-accredited LIS program websites regarding published requirements, required skills, methods of evaluation, and the types of remedial support provided. Overall, this research revealed very little similarity between programs and little change since 2008. The majority of program websites had some type of competency in place with very few requiring formal skill assessment. Most competency requirements focused on knowledge of word processing and presentation software, with little focus on Web 2.0 technology. Programs with a requirement in place generally promoted library or IT workshops as a means of assistance. Additionally, program websites with similar profiles (e.g., i-Schools, online programs) also varied in approaches.

Keywords: content analysis, LIS education, technology competency, online programs, i-schools, student assessment

Introduction

The field of librarianship draws individuals from a variety of backgrounds and life experiences. Some incoming Library and Information Science (LIS) students are "digital natives," often fresh out of their undergraduate experience and well-versed in a variety of technologies. Others are entering the field after relatively lengthy careers in other areas and represent "digital immigrants" as they may have adopted new technologies later in life (Prensky, 2001). The task of teaching students with such a broad range of skills and experiences has led some LIS graduate programs to develop technological skill requirements to ensure that incoming students are fully prepared to begin their education and succeed in an academic environment that has become largely dependent on technology.

Dominican University's Graduate School of Library Information Science requires incoming students to demonstrate technological competency. An ALA-accredited program just outside Chicago, Dominican developed its LIS student technology competencies in 2007. These competencies require all students to complete a series of tests demonstrating adequate skills in the use of Microsoft Office and HTML as well as the ability to search the

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Internet, evaluate web pages, and manage files. Students must complete and submit these tests for evaluation by the end of their first nine credit hours. Assistance is provided for inexperienced students through workshops provided by the Dominican chapter of the Library and Information Sciences Student Association and the IT department.

After several years of use, Dominican's Technology Competency Committee has decided to revisit the requirements and system used to evaluate students. This evaluation came after student discontent with the current setup, largely coming from technologically-savvy digital natives who saw the required tests as busy work—overly simple yet time-consuming. In the process of revamping Dominican's technology competencies, questions have arisen as to what other LIS programs are doing to evaluate and assess incoming student skills.

Revisiting and building upon a prior study conducted in 2008, this research examined the websites of the 58 ALA-accredited LIS graduate programs in order to better understand what schools are currently doing to ensure their students have the technological skills necessary for academic success. While Dominican's Technology Competency Committee will directly benefit from a survey of other schools' practices, this study will also help provide a better understanding of the expectations of the field as a whole and how these may have changed over the past four years.

The following research questions were specifically posed:

- How many LIS graduate programs provide published technology requirements and what form do these take?
- What skills do program websites list as requirements and/or recommendations?
- How do programs evaluate incoming students' technical knowledge?
- What types of remedial support do programs provide for incoming students?
- Do schools with a similar profile share similar requirements, evaluation methods or remedial support?
- How have technology competency expectations specified on program websites changed since 2008?

Literature Review

As the evolution of technology continues to impact on the field of librarianship, educators in LIS have reassessed curriculum accordingly. The impact of technology on LIS education has been widely documented in the literature, perhaps most notably in the 2000 KALIPER Report (Association for Library and Information Science Education, 2000). After completing their in-depth assessment of LIS curricula, the scholars behind KALIPER marked a curricular sea change by identifying technology as a major component in coursework trends. This development was further examined in Markey's widely cited study of LIS curricula which designated technology as a major emerging theme based on the 55 ALA-accredited programs examined (Markey, 2004).

Currently, the American Library Association Office of Accreditation requires LIS programs to integrate the theory, application, and use of technology into curriculum as stated in standard II.3 of the Standards of Accreditation (American Library Association, 2008). While there is still a noted lack of continuity among programs, many LIS educators have reconsidered traditional core curriculum and removed reference courses, replacing them with more-technology-oriented classes (Riley-Huff & Rholes, 2011; Hall, 2009; Chu, 2010). For many students, technological competency is seen as necessary upon graduation and employers expect graduates to have a working knowledge of various applications, from word processing to web development (Chow, Shaw, Gwynn, Martensen, & Howard, 2011; Del Bosque and Lambert, 2009).

While there is a wealth of literature

documenting the implementation of technology into LIS curricula, very little has been written regarding the technological abilities of incoming students and what programs are doing to ensure students are prepared for a curriculum infused with technological demands. One 2009 study, by Hanson-Balduaf and Hassell, examined the technology competency levels of school media specialist students. They found a variety of survey responses when students were asked to self-evaluate skill level in the use of traditional and emerging technologies. This study also noted the impact of student age in technology competency—survey respondents in the digital immigrant age range (30+) reported low competency in emerging technologies like social bookmarking, wikis, and web-design tools while their younger counterparts reported high skill levels.

Kules and McDaniel (2010) examined LIS program expectations of incoming students. This study, conducted in 2008, used content analysis to examine published requirements, evaluation methods, and remedial support provided on program websites. The authors found little similarity among the 57 ALA-accredited programs examined and that subsets of online and traditional programs were similarly disparate in their expectations of students.

Library and Information Science is certainly not the only field impacted by the evolution of technology and educators could benefit from an examination of other graduate fields to determine what else is being done to ensure student technological preparedness. The graduate field of nursing provides an excellent example of clear and standardized technology expectations and guidelines. Similar to the ALA Office of Accreditation incorporation of technology implementation into its standards, accrediting groups in nursing have worked to ensure technologically competent graduates by requiring a focus in curriculum (CCNE, 2009; NLNAC, 2013). However, unlike the ALA's standards, the 2012 standards of the National League of Nursing Accrediting Commission include a clear requirement directing programs to provide orientation in technology for students in master's/post master's degrees (Standard 3.8).

Rather than depending on individual programs to determine effective technology competencies for nursing students, in 2004 a grass-roots cooperative known as Technology Informatics Guiding Education Reform (TIGER) began as a way for leaders in nursing education at the baccalaureate and advanced levels to develop a clear set of expectations (Walker, 2010). Beginning in 2007, a TIGER work group collected competencies from literature and practice and created a minimum set of competencies for nursing students (Technology Informatics Guiding Educational Reform, 2009). The first level of recommended student competencies developed was a set of basic computer skill expectations modeled after the requirements laid out by the European Computer Driving License Foundation (http://www.ecdl.com/). These basic computer competencies recommend that nursing students understand concepts of information technology and become skilled at managing files, word processing, web browsing and communication. While these technology competencies are only recommendations and are not mandated for nursing programs, they do represent the ability of a field to generate a recommended and standardized set of expectations.

Methodology

In order to generate an understanding of technology expectations in LIS, this study used content analysis to examine the websites of the 58 ALA-accredited programs. This method allowed us to look at all the programs within our self-imposed, three-month research timeframe, rather than surveying program offices directly which would have taken too long and prevented us from reaching every program.

As we wished to update and expand

upon the successful study of competencies previously completed by Kules and McDaniel, we utilized a basic version of their iterative content-analysis framework by following their process of first conceptualizing categories, refining the coding scheme as needed, and, finally, individually analyzing LIS websites according to the refined categories.

With Kules's and McDaniel's categories as a starting point, we began by conceptualizing a list of coding schemes. Our focus was on four main categories of data—the types of technology requirements published on a program website, required skills, methods of evaluation, and remedial assistance provided. We refined our coding scheme by testing out the categories on three program websites and developed additional subcategories as needed (Appendix A). Inter-coder reliability was introduced by individually "practice coding" the text from different websites, determining whether any variations existed between each coder, and then discussing any disagreements in understanding of the concepts.

We then divided the list of the 58 programs among the three researchers to collect and code data by copying and pasting webpage text into a shared Google Document. This data was collected during the first three weeks of March 2012. In general, most information regarding technology competencies was found on admissions webpages (usually under "requirements") or on webpages devoted to current LIS students. After individually collecting and categorizing the information from program websites, we met as a group to review the coded data. Together we revisited the original text of each website and reviewed how the data was coded to help ensure that there were no discrepancies between coders.

Once this data was categorized, we analyzed the results and worked to identify any patterns among the program requirements. Using the Association for Library and Information Science Education's 2010 Statistical Report, we gathered profile information about each program; specifically, whether a school was online or face-to-face (F2F), iSchool or traditional, as well as enrollment rates. Schools were divided according to these categories and each cohort was analyzed to determine whether any trends existed.

Limitations

As Kules and McDaniel also discovered in their study, one glaring limitation of applying content analysis to websites is the possibility that some programs may not include their information online or in a publicly-accessible location. There would be no way for us to know this data was flawed without contacting the programs directly to corroborate our findings. Despite this limitation, we feel that this data is still viable as it presents a general picture of program expectations. Keeping expectations hidden from prospective students does not seem to be in the best interest of a program and we worked on the assumption that most programs would have any technological competency requirements publicly available.

Results

After gathering, analyzing and coding the data available on LIS program websites, we were able to generate a basic understanding of current technology competency requirements. The following results provide an overview of our findings concerning published technology requirements, specific skills required, evaluation methods, types of remedial assistance provided and whether schools with a similar profile share similar technology requirements.

Published Requirements

The first category, published requirements, included information on whether programs required students to have certain skills and the form of these requirements (Figure 1). Forty-five schools out of 58 (78%) had some form of technology competency requirement. Eight of these programs were added to more than one category as they had divided their technology requirements into multiple tiers, with certain skills required at different points during the educational process.

Of the 45 schools with a published requirement in place, 11 programs specifically required certain technology skills as a condition of admission. This was evidenced on admission webpages that either specifically listed skills as an admission requirement or required transcript evidence demonstrating applicable coursework. Seven programs suggested that students demonstrate technological competency as a part of the admissions process. These programs included schools that used terms such as "assume," "recommend," and "should" when describing the admissions process or specifically suggested (but did not require) adding information regarding technological experience to strengthen an application.

The largest number of programs fell into the category of requiring technological competency by the first day of coursework. The websites of eighteen programs specifically mentioned that students needed to gain a certain amount of technological skills by the first day of their classes. Programs with a required orientation technology workshop were included in this group.

Seventeen programs contained information on their websites indicating a requirement that students master specific skills at some point during their education. This category included any program that required students to complete computer literacy courses, tests, or self-evaluations at some point before graduation. Three programs within this category included further instructions as to when these requirements needed to be completed (e.g., before the end of the first semester, within the first nine credits).

Skills Required

Of the 45 programs with some form of

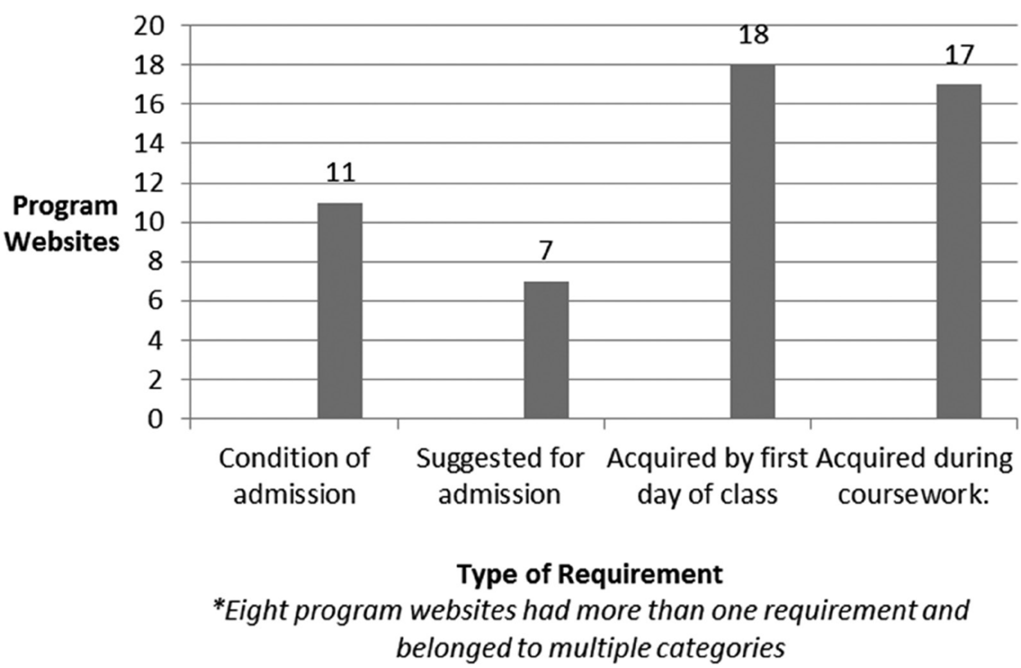

Figure 1. Published requirements.

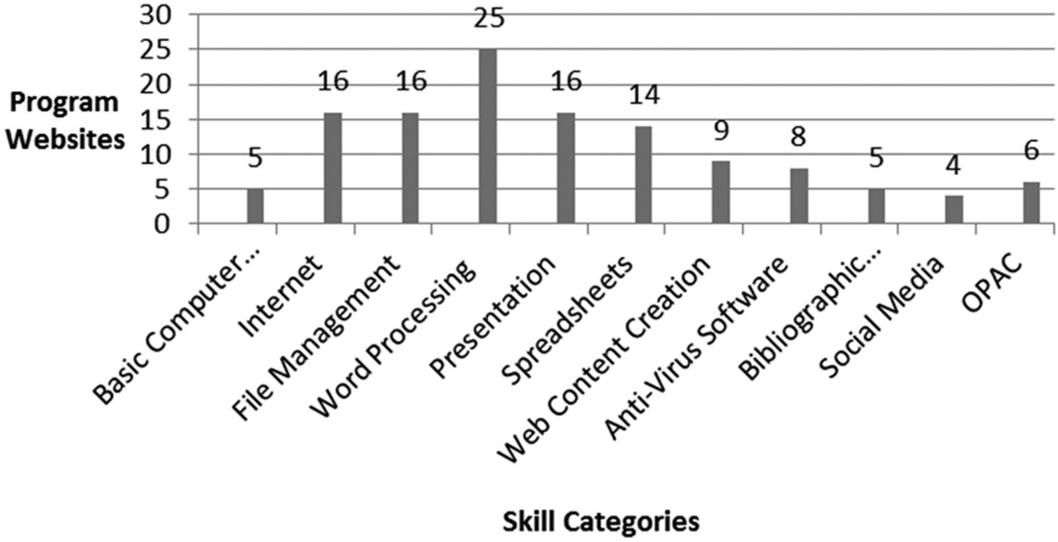

Figure 2. Required skills.

published technology competency requirement in place, 27 schools provided lists of varying detail regarding which skills students needed to acquire. Skills were divided into 12 categories for further analysis (Figure 2). The category with the highest frequency among program requirements was word processing with 25 schools requiring that students know how to write a paper using word processing software (e.g., Microsoft Word or similar software). Knowledge of presentation software, file management and the Internet were also common with 16 programs requiring each. The ability to create and edit spreadsheets was also required by 14 programs.

The ability to use social media (including wikis, blogs, and instant messaging) was the lowest represented skill with only four program websites containing a requirement that students learn this technology. Six programs required student knowledge of OPACs, while only five mentioned the use of bibliographic databases or database construction and design. Web content creation (including the use of HTML or programs such as Adobe's DreamWeaver) was required by nine schools, while eight schools required student knowledge of anti-virus programs.

Skill Evaluation

Skill evaluation was the third main category of analysis and included the various assessment methods used by programs (Figure 3). Four programs with a published requirement (other than admissions condition) had no evaluation requirement whatsoever featured on their websites. Sixteen programs had a self-administered checklist on their websites for students. These self-administered checklists did not need to be submitted after completion, but simply acted as guides for students, helping them to identify their weaknesses in technology so that they could potentially acquire necessary skills. Five programs required that students submit a test to prove their technology skills. These tests could be a practical test illustrating their skills or a more standardized test to prove they had the knowledge needed to utilize technology while a student in their LIS program.

Fifteen programs required student enrollment in a basic technology course to fulfill competency requirements. These courses were either for credit or a grade similar to any other required class students would take while in the LIS program. We differentiated these basic courses from other more advanced technology course requirements by following Kules's and McDaniel's method of analyzing course description language. Descriptions that used terms such as "basic" or "introductory" and covered skills such as using Microsoft Office software or learning basic HTML all fell into the category of competency data.

Only two programs had an option for students to avoid a basic required technology course by prior success in a specified test of their technology skills.

Remedial Support

The fourth main category of our coding analyzed the remedial support provided by programs to help students acquire technological proficiency. In our examination of program websites, we found that 38 provided opportunities to help students acquire skills (Figure 4). Optional workshops were a popular method of providing support, with nine programs offering their own support sessions, 12 directing students to workshops through their school's IT department and four pointing to library-based workshops.

Required courses were the most common method of ensuring student technology proficiency with fifteen programs requiring basic technology courses for incoming students. Five schools provided assistance through orientation sessions. Eight schools suggested that students use outside resources such as community college classes, or websites, with half of these programs providing outside resources as the only means of support.

Program Trends

After the analysis of technology competencies previously described, LIS programs were then divided into cohorts based on whether they were iSchool or traditional, online or F2F, and by enrollment size in order to determine whether any competency trends existed among similar programs.

We analyzed the data collected for the ten programs with the largest enrollment (based upon the 2009 reported rates) and found only two programs had a technology course requirement, while another two required attendance at a technology orientation prior to beginning the program and the submittal of a skill test. A third program

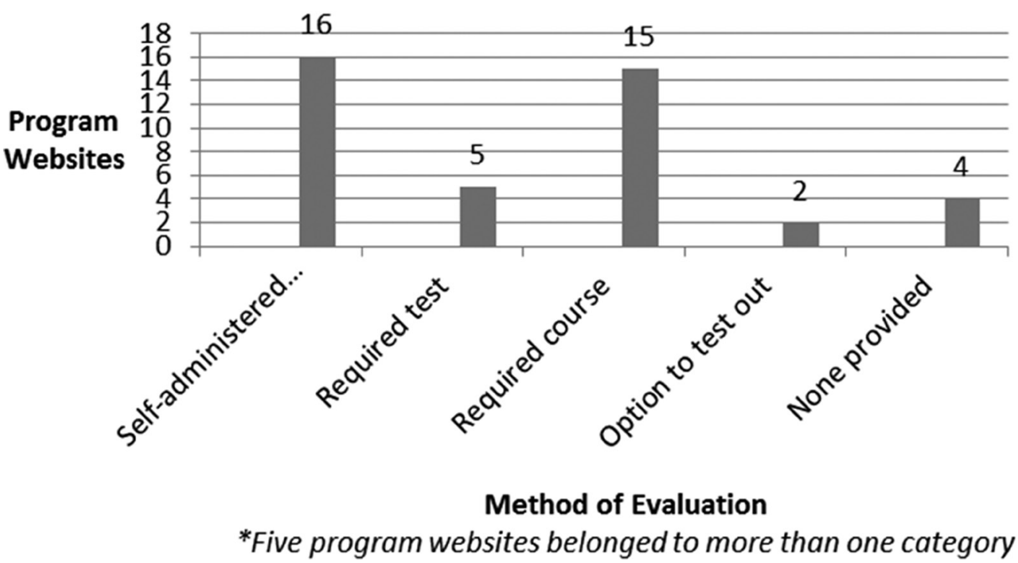

Figure 3. Evaluation.

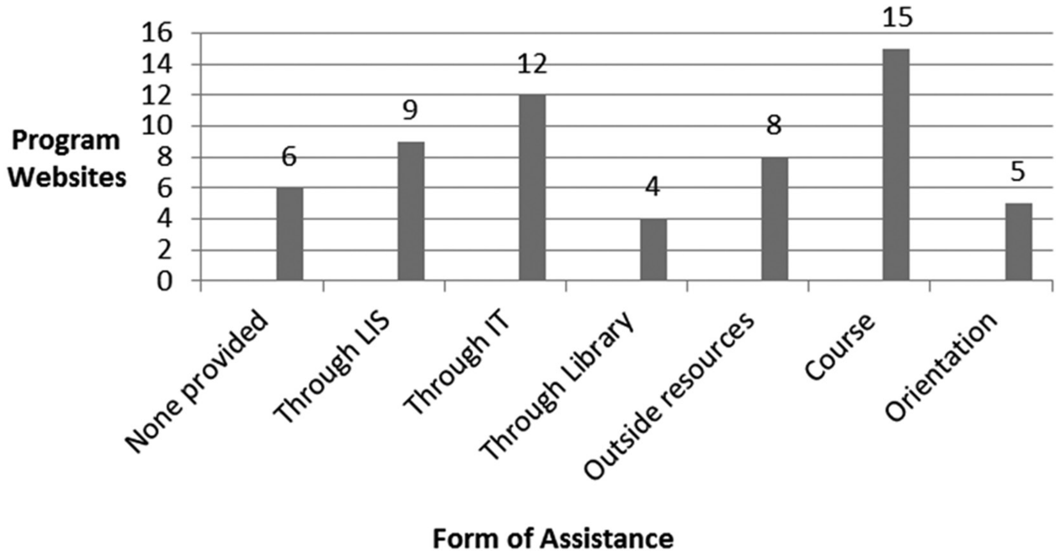

Figure 4. Remedial assistance.

required a submitted test prior to beginning the program, yet their website appeared to offer no assistance in the acquisition of these skills. Meanwhile, three additional schools identified technology skills as a condition of admission to the program.

Of the 17 "iSchool" websites examined, none specified that technology skills were required for admission, six required that the skills be obtained at some point during the program, with only three identifying the necessary skills on their websites. Ten appeared to require no evaluation of students' technology skills, while two provided a self-administered checklist and four used required courses as the evaluation method, with only one offering the option to test out of the course. Few (four) iSchool websites advertised any assistance outside of taking a required course, but seven of the 17 programs required technology courses beyond the basic level as part of their curriculum.

According to the ALA Directory of Accredited Programs (2012), there are 23 institutions that offer a 100% online MLIS degree option. A comparison of published requirements among online programs revealed that 19 of the 23 (83%) schools had in place some type of published requirement—compared to 74% of the remaining 35 traditional programs. Three programs required this as a condition of admission, three suggested it as an admission consideration, while most (13) required students to gain knowledge of certain technology skills by the first day of class or at some point during the process. Over half (57%) of schools with online programs had some type of student technology skill evaluation tool in place which was similar to traditional programs of which 47% had an evaluation tool in place.

Discussion

This study set out to provide an understanding of how LIS programs ensure that students are prepared for the demands of graduate study in the twenty-first century, how these expectations may have evolved since Kules's and McDaniel's previous 2008 study and how various types of programs compare in their approach.

While the majority of programs contained information on their websites regarding a technology requirement, our research found these requirements took many different forms. A prospective LIS student investigating potential programs would find a wide and fairly confusing variety of requirements and recommendations, from nine schools requiring demonstration of technical prowess in the application process to 19 programs which encouraged, but did not mandate, the acquisition of skills before the first day of class.

The number of programs with information about technology competencies appears to have increased since data was initially collected in 2008. Our study found 45 (out of 58) program websites with some form of technical competency while Kules and McDaniel identified 40 (out of 57). While this might mean that more programs are working to ensure student competency, it might also indicate that the five additional programs already had competencies in place but only recently placed this information online.

Out of the 45 programs with a publicized technology requirement, only 26 provided information on recommended skills. This discrepancy is likely due to the fact that 15 programs had used required courses to ensure competency and did not need to provide a list of needed skills. Lists of skill descriptions widely varied in detail, from one program that simply required students possess a "basic level of computer literacy," to others with extensive lists of finely detailed tasks students would need to be able to complete. By far the most common recommended skills related to word processing, presentation software, and spreadsheet management. A comparison of required skills with the 2008 study results showed the heavy focus on basic skills remained constant. We expected to see an increase in the number of programs requiring student proficiency in Web 2.0 and social networking technology but this remained flat (4 websites). Requiring that incoming students be able to create web pages and understand HTML increased slightly, from six programs in 2008 to nine in 2012.

With the ALA requiring programs to integrate technology into the curriculum, we would argue that many programs appear to be setting the bar too low for incoming students. Rather than challenging them to gain or hone new skills which could be further developed within coursework, incoming students (particularly digital immigrants) would be starting from scratch within a course instead of being pushed to rapidly grow during their time in graduate school.

Of the 45 programs publicizing some form of technology competency, an analysis of evaluation methods again suggests that a prospective student could anticipate very different levels of evaluation depending on program. From a semester-long required course focused on basic computer technologies to a simple self-enforced checklist, the rigor and expectations varied greatly. Based on our experience at Dominican University, where the LIS department heads a fairly elaborate system of student skill tests, it was not too surprising to find that more programs relied on the honor system and self-administered checklists to help ensure student preparation rather than formal, submitted tests. Kules and McDaniel did not subdivide data on evaluation methods so we were not able to compare any changes over time in this area.

Ninety percent of programs with a published requirement provided some form of remedial support for students (excluding the programs with admission requirements as these would logically not provide support resources). Interestingly, there were four programs that had a published requirement, but no indication of remedial support on their websites. Remedial assistance publicized on program websites appears to have increased from 25 programs in 2008 to 38 programs in 2012. Both our total and Kules's and McDaniel's count included required or recommended basic technology courses, workshops, orientations, or outside linked resources. In addition, we wished to extend the work of Kules and McDaniel by further quantifying the types of support provided. We found the most common source of assistance came from within LIS programs with support provided at incoming student orientations or through program workshops.

While the 58 programs examined produced varied results in every main category of analysis, even programs of a similar profile shared very few similar technical competency requirements. One might assume that the websites of LIS programs with larger enrollment might have more information on required technology competencies in order to better streamline the education of the large number of incoming students. However, based on our findings, there does not appear to be any correlation between the size of the program and types of required competencies, necessary skills, evaluation or remedial support.

While online programs were slightly more likely than traditional schools to provide published requirements on their website, these programs did not show any other more-uniform results than the overall data set. The websites of iSchool programs appeared to assume incoming student competency and did not require skill assessment. Despite this apparent lack of skill requirement, we found iSchool websites frequently indicated that students were expected to take courses in technology beyond the basic skill level.

Faced with such mixed results, clearly there are no standardized technology competency requirements among LIS programs. Given the ever-growing importance of technology in this field, the lack of best practices in programs' technology competencies is cause for concern. Because there are no overarching similarities between programs, new LIS students may be inconsistently trained in the use of technologies necessary not only for academic success but to help create a foundation for continual growth after graduation.

Additionally, the wide range of competencies required by similar programs suggests a lack of communication between institutions. As Dominican University's Technology Competency Committee has discovered, developing an effective method of measuring and assisting students in technological skill development can be challenging. Despite the competition that exists between schools, by communicating and sharing best practices, the LIS education community could strengthen student experiences and enrich the field as a whole.

In order to ensure that all programs consider the importance of these competencies, the ALA Office of Accreditation may want to incorporate an additional standard that specifically addresses the importance of ensuring that incoming students are technologically prepared for coursework. LIS educational leaders should consider looking to nursing, or other such programs where professionals and educators have taken the initiative to create their own set of standards as described previously in the literature review.

Conclusion

LIS student technology competencies represent the basic skills necessary for academic success and provide the foundation for the eventual acquisition of new and more advanced skills as students continue in their coursework and eventually enter the field. However, these technical requirements represent only a small piece of a larger puzzle concerning how to ensure that graduating students are prepared for the constantly-shifting technological demands of twenty-first century librarianship. Until there is some method of measuring students' ability to adapt and learn new technologies, evaluating the computing skills required by LIS programs provides, at the very least, a broad and basic understanding of what today's students are required to learn.

Based on the overview presented in this study, there are opportunities for further research to potentially determine the effectiveness of particular requirements.

Using the information gathered in this paper, researchers could create a cohort of programs that utilize a particular type of requirement and survey those institutions to determine satisfaction with current requirements thereby generating an analysis of whether certain approaches may be more effective than others.

For institutions such as Dominican University wishing to revamp their current competency expectations, this research provides the starting point to determine how one program's expectations compare with other ALA-accredited schools' technology requirements, necessary skills, evaluation tools, and methods of assistance. For the field as a whole, we hope this research advances the larger conversation regarding LIS educator expectations and the possibility of collaboration on a recommended set of technical competencies for all programs.

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Appendix A

	Published Requirement					Evaluation				
Program Website	Condition of Admission	Suggested Admission	Acquired by 1st Day of Class	Acquired at Some Point during Process	ID Skill Set Needed	No Evaluation Required	Self Administered Checklist	Submitted Test - Required	Basic Course Grade/ Credit	Test Out of Required Basic Course
Alabama			1		1		1			
Albany				1					1	
Alberta	1				1					
Arizona			1						1	
British Columbia		1			1				1	
SUNY Buffalo State			1		1	1				
UCLA										
Catholic University of America		1		1	1		1			
Clarion										
Dalhousie	1		1	1	1	1				
Denver									1	
Drexel		1			1		1			
Emporia State									1	1
Florida State										
Hawaii	1						1			
Illinois			1		1					
Indiana				1					1	1
Iowa										
Kent State				1	1				1	
Kentucky				1					1	
Long Island										
Louisiana State			1		1		1		1	
McGill	1				1	1				
Maryland			1	1	1		1			
Missouri—Columbia										
Montreal	1		1		1		1			
North Carolina—Chapel Hill				1					1	
North Carolina—Greensboro	1				1					
North Carolina Central			1				1			
North Texas			1		1			1		
Oklahoma			1		1		1			
Pittsburgh										
Pratt Institute				1					1	
Puerto Rico		1							1	
Queens College, CUNY				1					1	
Rhode Island			1		1		1			
Rutgers			1		1		1			
St. Catherine										
St. John's	1									
San Jose State	1				1					

(continued)

	Published Requirement					Evaluation				
Program Website	Condition of Admission	Suggested Admission	Acquired by 1st Day of Class	Acquired at Some Point during Process	ID Skill Set Needed	No Evaluation Required	Self Administered Checklist	Submitted Test - Required	Basic Course Grade/ Credit	Test Out of Required Basic Course
Simmons			1		1			1		
South Carolina				1				1	1	
South Florida		1								
Southern Connecticut State		1							1	
Southern Mississippi										
Syracuse										
Tennessee			1		1		1			
Texas, Austin				1			1			
Texas Women's	1				1		1			
Toronto	1			1	1		1			
Valdosta State				1	1					
Washington				1					1	
Wayne State	1		1		1			1		
Western Ontario				1						
Wisconsin—Madison			1							
Wisconsin—Milw aukee		1	1		1		1			
Dominican				1	1			1		

	Remedial Assistance						
Program Website	Provided through LIS Workshop	Provided through IT	Provided through Library	Directed to Outside Resources	None	Provided through Required/Recommeded Course	Provided at Orientation
Alabama		1					
Albany						1	
Alberta							
Arizona						1	1
British Columbia						1	
SUNY Buffalo State		1	1				
UCLA							
Catholic University of America	1						
Clarion							
Dalhousie		1					
Denver						1	
Drexel				1			
Emporia State						1	
Florida State							
Hawaii		1		1			
Illinois	1						
Indiana						1	
Iowa							
Kent State						1	
Kentucky						1	

(continued)

	Remedial Assistance						
Program Website	**Provided through LIS Workshop**	**Provided through IT**	**Provided through Library**	**Directed to Outside Resources**	**None**	**Provided through Required/Recommeded Course**	**Provided at Orientation**
Long Island							
Louisiana State			1	1		1	
McGill							
Maryland				1			
Missouri—Columbia							
Montreal					1		
North Carolina—Chapel Hill						1	
North Carolina—Greensboro	1						1
North Carolina Central				1			
North Texas					1		
Oklahoma				1			
Pittsburgh							
Pratt Institute						1	
Puerto Rico						1	
Queens College, CUNY						1	
Rhode Island		1		1			
Rutgers	1						
St. Catherine							
St. John's						1	
San Jose State						1	
Simmons	1	1					1
South Carolina						1	
South Florida					1		
Southern Connecticut State							
Southern Mississippi							
Syracuse							
Tennessee		1		1			
Texas, Austin	1	1					
Texas Women's					1		
Toronto	1						
Valdosta State		1					
Washington						1	
Wayne State		1	1				1
Western Ontario		1					
Wisconsin—Madison							1
Wisconsin—Milw aukee	1	1	1				
Dominican	1						

Appendix B. List of ALA-Accredited Programs with 2009 Enrollment

Institution	Students in Program: Masters Only	Institution	Students in Program: Masters Only
Alabama, University	256	North Carolina—Greensboro, University of	235
Albany, University of	239	North Carolina Central University	300
Alberta, University of	101	North Texas, University of	840
Arizona, University of	295	Oklahoma, University of	174
British Columbia, University of	146	Pittsburgh, University of	425
Buffalo, State University of New York	253	Pratt Institute	342
California—Los Angeles, University of	166	Puerto Rico, University of	97
Catholic University of America	216	Queens College, City University of New York	535
Clarion University of Pennsylvania	467	Rhode Island, University of	172
Dalhousie University	126	Rutgers University	190
Denver, University of	167	St. Catherine University	N/A
Dominican University	501	St. John’s University	83
Drexel university	611	San Jose State University	2313
Emporia State University	306	Simmons College	756
Florida State University	625	South Carolina, University of	407
Hawaii, University of	87	South Florida, University of	398
Illinois, University of	542	Southern Connecticut State University	293
Indiana University	577	Southern Mississippi, University of	164
Iowa, University of	113	Syracuse University	193
Kent State university	678	Tennessee, University of	207 Masters IS
Kentucky, University of	213	Texas - Austin, University of	251 Masters IS
Long Island University	393	Texas Women’s University	559
Louisiana State University	159	Toronto, University of	455
McGill University	160	Valdosta State University	209
Maryland, University of	343	Washington, University of	363
Michigan, University of	369 Masters IS	Wayne State University	588
Missouri-Columbia, University of	294 Masters IS	Western Ontario, University of	278
Montreal, University of	239 Masters IS	Wisconsin—Madison, University of	201
North Carolina—Chapel Hill, University of	24	Wisconsin—Milwaukee, University of	667