

Where Collections and Metaliteracy Meet: Incorporating Library-Owned Platforms into Open
and Collaborative Library Instruction

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Introduction

As both a collection development librarian and an instructor, I am keenly aware of how work in one area informs work in the other. Contact with students through instruction gives me perspective on the resources they need, and comprehensive knowledge of the library's resources helps me direct students to the proper resource at the appropriate time. Mason Library at Keene State College has, like many academic libraries, moved toward curation and creation of content through an institutional repository, sponsorship of events that showcase faculty and student work, research guides, and new initiatives in the archives. Yet the majority of teaching that the librarians do is still focused on large databases and expensive subscription content. Because I suspect that this is the case in many libraries, I suggest that we consider alternative ways to teach while showcasing and contributing further to library curated content.

This chapter will discuss institutional repositories and research guides as two library initiatives which are ideal for use in instruction provided by librarians, whether that takes the form of one-shot sessions, a librarian embedded within a course, or a full course taught by a librarian. While there is a great deal of literature about the implementation and reception of institutional repositories, it is only recently that the literature reflects the use of the repository to teach and foster student research. The time is therefore right to examine the institutional repository through the lens of metaliteracy, as this comprehensive model provides opportunities to teach students the research process from knowledge acquisition through scholarly dissemination in an online, open access environment. This chapter will present ideas for implementing such instruction through the application of the metaliteracy learning objectives, as well as discuss means of assessment. By the end of this chapter, readers will come away with

new ideas that will allow them to rely less on costly subscription content and promote the work they are doing to curate local collections more.

Context

Academic library collections are in a state of flux. Many libraries are developing electronic collections and purchasing fewer print volumes, preferring to allocate library space to study areas, cafés, and learning commons instead of stacks. Patron-driven and demand-driven acquisitions are replacing the “just in case” model of purchasing with the “just in time” model of purchasing¹. The rising cost of subscriptions coupled with decreasing budgets has led collection development librarians to rethink the ways in which they license or purchase materials and how those materials are used. There are issues of accessibility from off-site and a surprising number of vendors still do not offer proxy authentication as an access option to academic institutions.

At Keene State College professors are requiring fewer expensive textbooks and relying on more dynamic online content such as blogs and open access articles in the classroom. Research paper requirements are dependent upon peer-reviewed scholarly articles and often do not include books. Consequently, circulation is decreasing as students are becoming more accustomed to electronic resources and spending less time in the stacks selecting resources². From an instructional standpoint, the prevalence of wikis, social media, and blogs in the classroom present valuable opportunities for participatory learning consistent with the objectives of metaliteracy, which represents an instructional shift away from skills development and toward collaborative production of information through these interactive technologies.³ However, while creation of information is happening on new platforms the search for information through librarians’ instruction is often centered on the database tutorial. Students are still being taught how to locate and evaluate scholarly material in subscription databases, consistent with previous

skills based models of information literacy. It is time for librarians to rethink their lessons to include or even focus on library-curated collections and open access platforms in instruction. There is great potential for encouraging collaboration, contribution to the scholarly process, and engagement with dynamic content through institutional repositories, research guides, and open access journals. Use of these platforms in library instruction can decrease the library's dependence on costly subscription databases while also providing instruction that is relevant to 21st century learners. Students who do not go on to graduate school might not have access to expensive databases after they graduate, and if they learn information skills in a closed, pre-tested environment there is no guarantee that they will be able to apply those skills to open access resources in their careers or future research pursuits. Promotion of research activities through these avenues helps librarians prepare lifelong researchers regardless of where students might go after graduation.

It is important to briefly clarify that the platforms on which libraries create content, from research guide software to website servers, have a cost associated with them. These are not free resources like blogging sites or wikis. However, not only is that cost often significantly less than the cost of a large database subscription but it is a cost associated with creating large amounts of *unrestricted, owned* content. Springshare's LibGuides platform costs up to \$1,099 and the average cost that libraries paid for BePress's Digital Commons in 2013 was \$20,000⁴. Compare those amounts to the \$72,536 a Research 2 institution paid in 2009 for access to Taylor & Francis journals or the \$89,190 cost of a Master's university subscribing to an Elsevier bundle that year, and a \$20,000 subscription that enables the creation and dissemination of original content appears to be a reasonable investment⁵. Additionally, if the library budget were to be reduced, libraries may lose the leased platforms but still keep the material they created on them.

Connecting Collections and Instruction

Institutional Repositories

In 2012 the Directory of Open Access Repositories reported 1,857 institutions supporting institutional repositories, platforms on which academia, nonprofits, research centers, and other institutions archive their research output and institutional memory ⁶. In 2013 the Directory of Open Access Journals listed nearly 10,000 fully open journals, which publish original peer-reviewed content, in a number of disciplines⁷. The growth of open access publishing in the past ten years represents a shift in scholarly communication from journals that require authors to surrender their copyright and restrict access to research behind an expensive paywall to a model in which researchers can share their work and ideas with a broader audience. As peer-reviewed open access journals such as PLoS and repositories like PubMed demonstrate that open access content can be both high quality and sustainable, the infrastructure of open access continues to improve and its acceptance and adoption are widespread.⁸

In many colleges and universities institutional repository initiatives are undertaken by the library. Mason Library at Keene State College, for example, is in the process of getting its institutional repository off the ground, focusing on the digitization and inclusion of a number of archival collections as well as the solicitation of student and faculty research. Many institutional repositories are completely open access, while others require an affiliation with the institution to freely access content. Institutional repositories allow for self-archiving within an institution on a platform where faculty and students can present their work accessibly to others in the institution and in the field without the obstacle of a paywall. Some institutions, like Keene State College, even use their institutional repositories as a platform to start their own online open source journals in which to publish student and faculty research. In these ways institutional repositories

provide a ready-made space for students to learn about the scholarly process in its entirety more easily than they would in established peer reviewed publications. Within the institutional repository they can be both consumers and creators in a local context that is meaningful to them.

Teaching Through an Institutional Repository

The learning objectives of metaliteracy include the ability to share, collaborate, and contribute to participatory environments and there are already a growing number of initiatives that provide excellent models of how to incorporate an institutional repository into this type of instruction. For example, at Keene State College students in the history department combine primary source literacy and digital literacy by transcribing Civil War era letters which are added to the institutional repository. Each record includes the name of the student responsible for the transcription, thereby recognizing their work and providing an opportunity for them to include it in a portfolio or later research. At the University of Illinois at Urbana-Champaign, students participating in courses that are part of the Ethnography of the University Initiative conduct research through the institutional repository and then build on existing collections by contributing their own work at the end of the course. Faculty who teach within the program have the benefit of new research foci each semester and students receive what is likely their first experience with the scholarly communication process. The coursework also includes a poster presentation session so that students learn the entire process from identifying relevant sources in the institutional repository, through authors' rights and copyright, all the way to presentation and dissemination⁹.

An institutional repository also provides students with a tangible example of the research process within their own academic context, so it is important to show students how they can use the institutional repository to help them develop ideas for research or conduct a portion of their

literature review. Spending some time in a one-shot instruction session demonstrating the use of the institutional repository's interface and talking to students about the content available is a great way to not only help students find materials they need but also to introduce them to open access and the scholarship cycle. As a librarian at the School for International Training Graduate Institute, which has a robust institutional repository of students' capstone papers and presentations, I frequently taught students the importance of using the institutional repository to examine the work of their predecessors in order to identify gaps in the research or areas of inquiry that had been exhausted before embarking upon their own research. Analyzing the work of their predecessors encourages students to think about their own research and writing, and the institutional repository is a venue in which they understand their participatory role in the scholarly community. Papers from the institutional repository often appeared as part of their literature reviews alongside articles obtained from established journals. Students using the institutional repository for research will likely have questions about reliability of sources, availability of full text, citing preprints or unpublished papers, or how an article can be in both a journal and the institutional repository. These questions enable conversations about information and scholarly processes.

Students may also want to know whether their own papers and research can be submitted to the institutional repository. Librarians should consider solicitation of student contributions to the institutional repository as an avenue for teaching copyright and intellectual property issues. Many institutional repositories accept student research alongside archival materials and faculty publications as academia begins to recognize the value of encouraging research at the undergraduate level. If the repository does not already have a policy for accepting student research, the literature certainly supports efforts to change that. Many institutions, including the

School for International Training Graduate Institute, have digital collections of student theses and dissertations, while others like Utah State University have expanded their student collections to include research, posters, and creative work in addition to those traditional capstone collections¹⁰. Some institutional repositories, such as Western Oregon University's, are even defined as student-centric and maintain student research as the bulk of the collection.¹¹ Showcasing faculty work and archival material is still important to draw users in to the institutional repository, but there should be a sizable space for student contributions as well.

Application of Metaliteracy Learning Objectives

ACRL's 2000 Information Literacy Competency Standards for Higher Education, which most academic librarians have used as a guideline for the past 15 years, focus heavily on skills development¹². While skills development is both important and necessary, students must also develop higher order thinking in order to assess and deploy those skills effectively. Teaching through an institutional repository expands students' metacognitive processes in a way that teaching through subscription databases does not. Searching a database and an institutional repository are very similar, but the range of content that students must evaluate in an institutional repository is often more diverse (including manuscripts, preprints, and presentations, for example) than that of an article database. Advanced searching options that reduce the need for evaluation, such as limitation to peer reviewed content, will likely not be available in the institutional repository and students must therefore examine their own abilities to conduct an effective search and evaluate content, make the necessary adjustments to their paradigms of how to do those things, and recognize when their skill set is not adequate and needs further development.

Moreover, students will see the institutional repository as more of a community than a subscription database can be. They are likely to recognize the names of faculty, staff, and students whose scholarly contributions reside in the institutional repository, thereby teaching them by example that user-generated content has value to the institution and to the scholarly community. The obvious participatory nature of an institutional repository, an important facet of the third metaliteracy objective, is a significant benefit that cannot be matched by most library databases. Students become consumers of community-driven information and producers of information that can be included to advance that community.

The submission of content also presents the opportunity to develop the way students think about their research strategies and abilities. Teaching through the institutional repository provides an opportunity to expose students to information ethics and intellectual property in a way that goes beyond rote memorization, such as a presentation about plagiarism. Students will experience firsthand the importance of understanding information ethics and intellectual property because they will be adding their own work to the information environment. Submission of a student's work into an institutional repository is an excellent way to engage that student in the scholarly process from absorbing to creating information, but it will also make him or her think about the implications of having original work available to others on the Web. Questions posed may include: How comfortable are the students with their work being used by others? What if they were to be plagiarized? Worse, what if they were to be accused of plagiarism? These types of questions represent a higher order of thinking than the understanding of when and how to cite. They must consider the ethical implications of sharing information and critically evaluate their own contributions and how they might be used, thereby engaging with the second goal of the metaliteracy learning objectives.

Assessment

The emphasis on metacognition in this type of instruction poses an inherent problem when approaching assessment, namely that skill development is easily assessed whereas thinking processes are not. The best way to assess this type of instruction may differ for each instructor, but it is important to recognize that a pre- and post-test, feedback rating form, or other quantitative measurement is not likely to yield useful results. Instructors may consider asking students to write brief self-reflections about the instruction and their research process. Students might also include a meta-writing component with a draft of their paper, wherein they write notes throughout the paper about how they found the information they used, the evaluative process, and the decisions about how to synthesize the information. Instructors could also hold small group discussions or focus groups to talk with students about what did and did not work for them. The final product will of course be graded, but the useful assessment of the metaliteracy practices in this case will come from encouraging open, reflective dialogue.

As an aside, many institutional repository platforms provide statistics on how often a particular item is viewed or downloaded and instructors should view these statistics on their students' work regularly if possible. While the statistics cannot provide any type of useful assessment for the student who submitted the work in prior semesters, they can demonstrate to new students embarking upon this type of research that the work they do is important and will be utilized.

Research Guides as Metaliteracy Platforms

Institutional repositories provide a space in which students can engage with the research process and share their own scholarship, which is a participatory environment in its own right, but extensive digital collaboration requires a different medium. A growing understanding of the

need to engage students in collaborative learning has led many library instructors to embrace the use of blogs, wikis, and social media in the classroom. However, much of the literature on digital projects presents the use of platforms that are not connected to the library or institution such as WikiSpaces or WordPress¹³. While it is true that such projects can help students learn how to evaluate and work with digital content that constantly evolves (the basis of the first metaliteracy objective) they can also pose problems. When writing papers, creating posters, or designing presentations, students leave a course with tangible products that they can include in a portfolio or build upon in future research. If they create wikis or blogs instead the transient nature of the Web means that those materials they have worked to create could become inaccessible if content is removed or links are changed. Additionally, wiki spaces and blogs are platforms that anyone on the Web can utilize for any means, so there is nothing about those sites that connect students' work with their academic institution or shows that content was created as part of scholarly pursuits. Projects used in instruction that are contained within a course management system, like wiki spaces, pose similar access issues as they are closed when the course ends and cannot be shared within the scholarly community.

Many academic libraries are already using one system that can address these issues by providing a space for students to create and engage with information that will be branded within the institution and remain accessible to them. Springshare's LibGuides platform is a space to create research guides with a number of elements: different tabs across the top of the page for multiple subtopics, boxes for text or search widgets, and Web linking and embedding capabilities. While not all libraries subscribe to the platform, it is widely used: in early 2013, more than 2,000 libraries were using Springshare's LibGuides and there were 125,000 guides in existence.¹⁴ Most of these research guides are created by librarians, but there is enormous

potential for having students contribute to the guide collection through research and creation.

The creation of LibGuides immerses students in the technology-rich collaborative ethos of metaliteracy while also benefiting the library via the creation of new resources.

Student Creation of LibGuides

Implementing a LibGuide creation project requires a semester-long commitment, giving librarians who do not teach full courses the opportunity to collaborate with faculty to maintain an ongoing presence in a course throughout the semester. The actual work that students will do on their LibGuides occurs autonomously and outside of class, but the librarian will need to provide guidance and instruction through multiple class sessions or tutorials in the course management system. Additionally, the LibGuide creation should be conducted as a group project to cut down on the workload, to ensure higher quality of content for the finished product, and to encourage the collaboration that is a cornerstone of metaliteracy.

The project begins with what looks like a “traditional” information literacy instruction session in which a librarian teaches students how to identify and evaluate sources. It is important, however, that in-depth coverage is given to Web and open access resources. Because LibGuides are themselves open access, people outside of the institution will be able to view the guide but an abundance of subscription content from databases and journals means that most of the content will be hidden behind a proxy wall. It is helpful to frame this discussion with students as one of appropriateness of content for the medium, conjoining metaliteracy practice with the ACRL Framework for Information Literacy for Higher Education’s “Information Creation as a Process.”¹⁵ Students should understand that not every medium is appropriate for every type of content, and that the type of container has implications for how information will be used. LibGuides are an open access resource available to general Web traffic but are also a library

resource, so there is a balance to be struck between scholarly content and open access resources. It is therefore advisable to not only encourage but require a variety of resource types for inclusion in students' LibGuides, including scholarly articles, blogs, multimedia, websites, photos, social media, and other appropriate content.

A second session provides students with instruction on how to use the platform, which is simple and does not require any coding or other technical experience, and some best practices for Web design such as layout and color schemes. If a librarian chooses to provide this information through the course management system, he or she might do so by creating a tutorial video or interactive module to walk students through the process. Students can then embark upon the project on their own; they can get together as a group to work on the guide, they can assign tabs or sections and work on their own section individually, they can use it as a group communication space much like a Google Doc, and they can move things around and edit them freely. The pages remain private until the librarian approves them to be changed to public status.

One major benefit to students of this type of project is that LibGuides provide the option for students to include their own research activities, and librarians interested in piloting a LibGuides project may choose to start with upper level or research courses for this reason. Students can be encouraged to create an extra tab or section in their LibGuide to showcase their own research findings. In this way, they can pull together all of the information they have collected and then move the research forward through their contributions. Others in the field and within the institution will be able to access that work and build upon it. An excellent example of this occurs at the School for International Training Graduate Institute, where graduate students in a research course create LibGuides and include the results of their research (often surveys and interviews). The first few tabs on the LibGuide provide a wealth of background information

obtained through their research, and the final tab contains graphs, tables, charts, and descriptions of the students' research findings.¹⁶ Creation of the research tab helps students learn how to present research findings in a more visual way than they do when they write a paper, and many of them use the page as a reference point for continuing their research in their practica placements or as a piece of their professional portfolios.

Application of Metaliteracy Learning Objectives

Librarians strive through any type of instruction to teach students the importance of evaluating information, but a LibGuide project puts that instruction into a new perspective. The conversation about scholarly versus non-scholarly sources as a means of evaluation is outdated and this project provides the environment in which librarians can bring it up to date. According to the first metaliteracy objective, students must “appreciate the importance of assessing content from different sources” and “determine the value of formal and informal information from various networked sources”.¹⁷ This means demonstrating to students that every type of information has a setting in which it is appropriate to use, and if it is not scholarly we do not automatically eliminate it from the conversation. By requiring students to explore a variety of source types to include on their LibGuides librarians help students become digital researchers who are prepared for whatever environment they find themselves in – even if it is not an academic database.

In their original article introducing the concepts of metaliteracy, Mackey and Jacobson presented a number of abilities that today's digital researchers must have and that can be developed through the creation of open educational resources like LibGuides. For example, they indicate that researchers “must contextualize...information within a decentered environment that connects the professional and novice and makes accessible both formal and informal sources of

information.”¹⁸ This perfectly describes the environment of the LibGuides, which are open source and therefore available on the Web to any researcher regardless of skill level and which allow for the synthesis of several different types of information sources. Students will need to know how to navigate such environments, and allowing them to create one is an excellent way to immerse them in that type of digital learning. Mackey and Jacobson also acknowledge that today’s information seekers “may use factors such as... succinctness of the material, visual presentation and usability, and other elements that we now consider to locate information” which requires students to consider additional elements of design and presentation.¹⁹ Asking students to think about the ways in which they themselves identify relevant information and how they use it develops a metacognitive process that they will both employ and further explore through the creation of a LibGuide that other researchers will evaluate in the same manner.

Finally, the third goal of the metaliteracy learning objectives, “share information and collaborate in a variety of participatory environments,” is directly addressed by this project.²⁰ By expanding the LibGuide platform’s potential beyond a static page and into a collaborative, dynamic space, instructors can take the traditional model of group work and shift it into an environment where students can collaborate on the shared guide online. Students in a group will all locate and evaluate information independently, but then must discuss, evaluate, and synthesize the information collaboratively as well as design the page itself. When employed in a mixed or distance program, the LibGuide may even become a platform for group discussion. This overlaps somewhat with the second learning objective addressing information and ethics and should lead students to ask the same types of questions relating to plagiarism and intellectual property as those discussed in the section about institutional repositories. There is, however, the added component of shared contributions. Students will share credit for their work with others

throughout their academic and professional careers, but might not consider the differences that makes to their understanding of ethics and intellectual property. Are individual contributions being made ethically? If one member of the group plagiarizes, what will the consequences be for the group as a whole? How will future researchers attribute the work of the group?

Assessment

As discussed in the section about institutional repositories, assessment can be a difficult venture in metaliteracy instruction given its qualitative nature. However, assessment of a LibGuide project is somewhat easier because instructors will have a finished product that they can grade and use to assess the efficacy of the project. When conducting an assessment of a LibGuide, a rubric can be used to assess the quality and relevance of content, proper attribution, and design elements (see Figure 1 for an example). This is also a method of quality control – students can be informed that they must score at a certain level on the rubric in order for their guide or tutorial to be made public and thus represent the library. Assessment of this project is connected to the metaliteracy learning objectives by the expectation that the LibGuide created is reflective of the students' thinking processes during creation. An instructor is not just looking for demonstration of skills like proper citation or the application of keywords for searching, but rather evaluating the thought process that went into the design and presentation of the information, the depth of understanding of the research process represented by the variety of sources presented, and the success of collaborative efforts illustrated by the cohesiveness of the finished product.

A reflective writing piece can also give the instructor some insight into the ways students approached the project and whether or not they grasped the intended concepts. The first time this project was conducted at the SIT Graduate Institute, students were given a survey to complete.

The survey was intended to assess the project itself and provide feedback for making changes to it, but student responses to open ended questions were very thoughtful about how they divided up work, what types of sources they found challenging or easy to evaluate and use, and how they decided the best ways to tie in their own research. Students seemed to view the survey as more of a metacognitive reflection than technical feedback, which provided an unexpected but useful means of assessment.

Discussion

The fourth and final goal of the metaliteracy learning objectives states that students should “demonstrate ability to connect learning and research strategies with lifelong learning processes and personal, academic, and professional goals.”²¹ Providing instruction through an institutional repository or a LibGuide, resources that are branded and part of the institution, allows students to include their work in professional portfolios or continue to build on the research they conducted. Rather than just teaching skills, instructors who embark upon these metaliteracy initiatives may contribute to the formation of a student’s future academic or professional path. Librarians are moving toward a model of instruction that does not pigeonhole information sources into easy, discrete categories like authoritative or non-authoritative, scholarly or popular, and reliable or unreliable but instead develops students’ thinking about information sources in a more flexible and contextually-based way.

In order to serve this shift and ensure the relevance of the library in the Google age, we must redefine the library collection. The Oxford English Dictionary defines a collection as, “A number of objects collected or gathered together.”²² There was a time when this simple definition suited library collections, most of which were comprised of the number of volumes on the shelves. Later that definition was expanded to include digital objects as well, and the

“collection” encompassed the electronic books, journals, and databases that came to define the 21st century academic library. Today open educational resources, like institutional repositories and research guides, are once more leading us to redefine the library collection. Amidst budget crises and high prices, the collection has become an amalgam of books, subscriptions, and carefully curated open educational resources for which librarians advocate and solicit content. By redefining the collection under these terms, librarians can innovate and adapt their instruction in ways that engage students with collaboration, varied content, and the literacies demanded of today’s scholars and workforce. Instruction and collections can intersect in a more engaging way than was ever possible under the traditional definition.

Moreover, this redefinition ensures the relevance of the library collection in an academic environment that now spans multiple formats. Students in blended or distance learning programs need and deserve the attention of librarians as much as on campus students, but they are not interested in the books on the shelves that might be hundreds of miles away. Having the ability to shift instruction into that environment is a major benefit of librarians embracing the possibilities of their own platforms and other open educational resources. Instead of missing the opportunity to provide information literacy instruction to the growing number of students taking courses online, librarians will be set up to be embedded in courses with projects and lessons that have already been adapted to the Web. If those adaptations also include the use of open access resources that are not locked behind a paywall, the opportunities continue to expand: Massive Open Online Courses (MOOCs) are gaining in popularity, and while not all MOOCs are associated with an academic institution there is a role for librarians in them if their instruction has been revised for the medium.

Conclusion

Institutional repositories and LibGuides are certainly not the only ways in which librarians can utilize content held institutionally to facilitate metaliteracy. There are opportunities for students to create video tutorials, to use primary source literacy through work in the institutional archive, or to participate in institutional conferences or poster presentations with the assistance of librarians. The platform may vary but the objective remains to foster metaliteracy with more of the content that libraries create instead of focusing so heavily on purchased content or generic Web platforms, benefiting both the library and the students it serves. Making this shift will not always be easy and will require significant collaboration between the library and departmental faculty, but it is necessary for the continued relevance and sustainability of library collections.

¹ Marcia L. Thomas, "Disruption and Disintermediation: A Review of the Collection Development and Management Literature, 2009-10," *Library Resources and Technical Services* 56(3): 183-198.

² This observation is the result of a review of circulation statistics and a syllabus analysis that were recently completed as part of a collection assessment.

³ Thomas P. Mackey and Trudi E. Jacobson, "Reframing Information Literacy as a Metaliteracy", *College and Research Libraries* 64 (July 2011): 70.

⁴ LibGuides pricing information obtained from the Springshare website, <http://www.springshare.com/libguides>. BePress pricing information is not available on their website and this figure was obtained from a 2014 interview with their CEO found at <http://poynder.blogspot.com/2014/04/interview-with-jean-gabriel-bankier.html>.

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- ⁵ Theodore Bergstrom, Paul Courant, R. Preston McAfee, and Michael Williams, "Evaluating Big Deal Journal Bundles," *Proceedings of the National Academy of Sciences of the United States of America* 111 (July 2014): 9426.
- ⁶ Stephen Pinfield, Jennifer Salter, Peter A. Bath, et al, "Open-Access Repositories Worldwide, 2005-2012: Past Growth, Current Characteristics and Future Possibilities," *Journal of the American Society for Information Science and Technology* (article preprint, 2013): 16.
- ⁷ Heather Joseph, "The Open Access Movement Grows Up: Taking Stock of a Revolution," *PLoS Biology* 11(10) (October 2013).
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- ¹⁰ Danielle Barandiaran, Betty Rozum, and Becky Thoms, "Focusing on Student Research in the Institutional Repository," *College & Research Libraries News* (November 2014): 546-549.
- ¹¹ Erin Passehl-Stoddart and Robert Monge, "From Freshman to Graduate: Making the Case for Student-Centric Institutional Repositories," *Journal of Librarianship and Scholarly Communication* 2 (August 2014).
- ¹² Association for College and Research Libraries. "Information Literacy Competency Standards for Higher Education." <http://www.ala.org/acrl/standards/informationliteracycompetency>
- ¹³ Frank Boateng and Yan Quang Liu, "Web 2.0 Applications' Usage and Trends in Top US Academic Libraries," *Library Hi Tech* 32 (2014): 120-138.
- ¹⁴ Jennifer Emanuel, "A Short History of Library Guides and Their Usefulness to Librarians and Patrons", in *Using LibGuides to Enhance Library Services*, ed. Aaron W. Dobbs, Ryan L. Sittler, and Douglas Cook (Chicago: American Library Association, 2013): 12.
- ¹⁵ Association of College and Research Libraries. "Framework for Information Literacy for Higher Education", <http://www.ala.org/acrl/standards/ilframework>.
- ¹⁶ Amanda Scull, "Fostering Student Engagement and Collaboration with the Library: Student Creation of LibGuides as a Research Assignment," *The Reference Librarian* 55 (2014): 318-327.

¹⁷ Thomas P. Mackey and Trudi E. Jacobson, "Learning Objectives," *Metaliteracy.org*, 2014,

<http://metaliteracy.org/learning-objectives/>.

¹⁸ Mackey and Jacobson, "Reframing Information Literacy as a Metaliteracy", 73.

¹⁹ Mackey and Jacobson, "Reframing Information Literacy as a Metaliteracy", 73.

²⁰ Thomas P. Mackey and Trudi E. Jacobson, *Metaliteracy: Reinventing Information Literacy to Empower Learners* (Chicago: ALA, 2014): 88-90.

²¹ Mackey and Jacobson, *Metaliteracy: Reinventing Information Literacy to Empower Learners*, 90-91.

²¹ "collection,n." OED Online. March 2015. Oxford University Press.

Figure 1

	Excellent (3)	Acceptable (2)	Poor (1)
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Content and Research	Content demonstrates critical thinking about relevant and appropriate resources as evidenced by inclusion of information from a variety of formats (both formal and informal) that are suitable to the topic. The topic is fully represented by thorough research and information from a variety of sources is synthesized and presented coherently.	Content includes information in at least three types of appropriate formats and includes both formal and informal sources. There may be some gaps in the presentation of the topic or missing content that required further research. Information may not be synthesized attentively and it may be obvious which information was contributed by which student.	Content does not demonstrate critical analysis of information needs. Content includes only one or two formats and does not provide a complete picture of the topic. There is little to no synthesis of information from different sources.
Organization	Organization of the LibGuide demonstrates attention to presentation and consideration of a user's movement through the page. Content is grouped within relevant tabs and has a logical flow.	Organization of the LibGuide has a navigable flow, but use of relevant tabs and boxes is minimal. Content is understandable but not logically organized.	Organization of the LibGuide does not have a logical flow and usability is low. Little to no use of relevant tabs and boxes and content is not grouped within any themes or chronology.
Aesthetics	LibGuide demonstrates student's consideration of design and invites use. Appropriate images are included and there is a balance between text and non-text content. Color scheme is present but does not distract from content.	LibGuide demonstrates some consideration of design, but design elements may be distracting or unbalanced. LibGuide may rely too heavily on text or visual material at the expense of content navigability.	LibGuide demonstrates no consideration of design elements. LibGuide may lack any color scheme or images and rely entirely on text.
Student Research	Students demonstrate critical analysis of the research process by incorporating background research sections with their own research section in a way that is logical and contributes to the user's understanding. Background information is relevant to the topic of the students' research and identifies the gap that students' research fills.	Students demonstrate research skills through presentation of their own research, but background information may lack synthesis with research contribution. It may be unclear how the background information relates to the current research or what knowledge gap is being addressed.	Students do not present their own research. Student may not provide adequate background information on the topic. Background information may be unrelated to research presented.

Adapted from the rubric in Scull, Amanda. "Fostering Student Engagement and Collaboration with the Library: Student Creation of LibGuides as a Research Assignment." *The Reference Librarian* 55 (2014): 318-327.

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