The Future of Institutional Repositories at Small Academic Institutions: Analysis and Insights

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DOI: 10.1045/september2015-wu

Abstract

Institutional repositories (IRs) established at universities and academic libraries over a decade ago, large and small, have encountered challenges along the way in keeping faith with their original objective: to collect, preserve, and disseminate the intellectual output of an institution in digital form. While all institutional repositories have experienced the same obstacles relating to a lack of faculty participation, those at small universities face unique challenges. This article examines causes of low faculty contribution to IR content growth, particularly at small academic institutions. It also offers a first-hand account of building and developing an institutional repository at a small university. The article concludes by suggesting how institutional repositories at small academic institutions can thrive by focusing on classroom teaching and student experiential learning, strategic priorities of their parent institutions.

1 Introduction

The rapid expansion of the digital landscape at the beginning of the 21st century has provided tremendous opportunities for academic libraries to strengthen their place as a critical role player in higher education by quickly adopting cutting-edge technological innovations to fulfill the needs of their constituents. The institutional repository (IR), one of the innovations adopted by academic libraries, large and small, debuted in the early 2000's, and has now entered the implementation and assessment phase (Nykanen, 2011). Although many academic libraries have established an institutional repository with the primary mission of collecting, preserving and disseminating scholarship created by faculty and students, the current depositing estimates suggest that only between 15% and 30% of eligible scholars and researchers deposit their work in institutional repositories (Cullen & Chawner, 2011). Studies have questioned whether the services provided by IRs truly meet faculty needs, identifying a number of barriers that affect the
faculty participation rate, including but not limited to issues of copyright and plagiarism, citation impact and credibility, as well as time and effort in depositing (Davis & Connolly, 2007).

Over the years, system enhancements based on usability studies (Foster & Gibbons, 2005) have made IRs more adaptable to the research environment and helped to address some of these issues. Although IRs have become a more integrated library service at large academic institutions, repository managers have not been able to secure full faculty cooperation in content acquisition at small academic institutions where teaching is the main focus (Xia & Opperman, 2010). This is mainly due to the fact that although system design and service promotion have primarily focused on research needs, not enough attention has been given to faculty needs in teaching. In addition, small institutions are challenged by resource availability issues such as limited budget, personnel, and technology (Wrenn, Mueller, & Shellhase, 2009). In spite of such obstacles, librarians at smaller institutions are striving to find ways to keep the institutional repositories a vibrant service to their constituents, as their benefits are obvious. The facts of the matter are that these institutions have invested significantly to build and support institutional repositories, the norm of scholarship communication has gradually shifted to favor open access, and the rapid development of digital technology has fundamentally changed the paradigm of the library world. Moving forward is the choice to thrive in the new innovative landscape.

Beginning with a literature review and analysis of challenges facing institutional repositories at academic institutions in general and small universities in particular, this article then draws on a first-hand account of the development of an institutional repository at a smaller liberal arts university to explore opportunities and offer insights on how institutional repositories can support classroom teaching and student learning.

2 Literature Review and Discussion

2.1 Common Challenges Facing IR Content Recruitment

Studies have identified two major issues — poor adaptation to actual faculty needs and copyright concerns — as the major bottlenecks in building the case for IRs.

The goals of implementing an institutional repository at academic libraries have been discussed by a number of its pioneers in the early 21st century. In the early stage, the commonly acknowledged functions of an institutional repository at an academic institution were long-term preservation, organization and distribution of scholarship created by the institution and its community (Lynch, 2003). These traditional library functions were prevalent in strategies to spearhead content recruitment and service promotion after the initial launch, and they offered clear benefits to faculty such as broader dissemination and stewardship of scholarly output. However, these benefits are not sufficient to expand the institutional repository by attracting more faculty participation. After more than a decade of efforts to advocate the service following its launch, many academic institutions now find themselves struggling to make the institutional
repository active and vibrant against a lack of interest from faculty and scholars (Bankier & Perciali, 2008). While access to research output and increased publicity for the publication have been the most convincing talking points to solicit deposits, most academics already operate productively within the existing methods of scholarly communication, research dissemination, and validation (Cullen & Chawner, 2011). In order to explore the misalignment between the benefits and services of an institutional repository with the actual needs and desires of faculty, the University of Rochester, River Campus Libraries conducted work-practice studies on how faculty members do their research and writing in 2003. This yearlong study revealed that the most desperate need of faculty in scholarly undertakings was an authoring system to assist with document versioning, collaborative authoring, and centralized document access from any computer at any location (Foster & Gibbons, 2005).

Another study that took place from September 2008 to April 2009 at Dartmouth College examined how institutional repository services could meet the needs of humanities faculty in particular (Seaman, 2011). Although humanities scholars are a core part of academia, their special needs were rarely considered during the design phase of institutional repositories, which better accommodated research in the sciences. This oversight has resulted in a lower usage of institutional repositories by scholars in the humanities, for whom the need to influence fast-moving research via preprint exchanges or to answer the call for open access to publicly funded research is not as pressing. If the purpose of institutional repositories to preserve and disseminate knowledge is also to encompass the core fields of study represented by the humanities, they must be designed with the unique needs and concerns of these scholars in mind. These findings were not only well received by librarians and institutional repository managers, but also IR vendors and software developers, who have introduced many features over the years enhancing IR services and addressing these concerns. One such feature is the Faculty Page or Scholar Page, a built-in tool that allows faculty members to set up a dynamic personal web page where they can post draft papers in various stages. More than just a static webpage, it also serves as an announcement tool that faculty members can use to build their network by inviting colleagues, students, and others to subscribe to their page by RSS feed or email. The Scholar Page thus functions as an efficient scholarly networking and communication tool (Bepress, n.d.).

Copyright concerns are considered the most difficult to resolve. Faculty are often hesitant to ask permission from publishers to deposit a work in the institutional repository, as citation advantage and academic recognition have proven to be insufficient incentives to make one's publications publicly accessible. In an academic environment, faculty members' primary concerns are tenure, promotion and academic integrity (Xia, et al., 2012). Therefore, once an article is published, moving on to the next project is the common mentality. As a workaround to the risk of copyright infringement, libraries have encouraged faculty to deposit preprints to the institutional repository in place of the published version. However, the preprints are manuscripts that have not yet undergone peer-review and very likely differ from the final published version. Based on this author's observation and experience, faculty in the humanities and social sciences are typically less willing than their counterparts in the sciences to make preprints openly available to the public. The reason for this, as Peter Suber notes (Suber, 2004), lies in a number of structural differences between the humanities and the sciences. In the sciences, there is a greater need to influence fast-moving research and for timely notification of related developments in the field. To quickly circulate the most current results within a scientific community, distributing preprints
via disciplinary repositories is a common practice (Kim, 2010). This is not as pronounced for humanities faculty, and efforts to solicit preprints for repositories meet with less success.

Another strategy libraries have used is to encourage faculty authors to negotiate with publishers for the non-exclusive right to archive and deposit articles after publication. As journal policies could be confusing, difficult to follow, and unclear, faculty authors usually do not examine the copyright terms and sign it as is (Charbonneau & McGlone, 2013). There is no doubt that copyright restrictions imposed by publishers will remain a key barrier for libraries to make research output publicly accessible via institutional repositories. However, the very existence of institutional repositories has and will continue to put pressure on journal publishers to allow as much free online access to their products as economically feasible (Cullen & Chawner, 2011).

2.2 Unique Challenges for Small Academic Institutions

Nykanen defines a small academic institution as one that enrolls fewer than 10,000 undergraduate and postgraduate students (Nykanen, 2011). In this author's experience, institutional repositories at small academic institutions face unique challenges which have yet to be extensively studied. Further analysis would offer insights on marketing strategies and system enhancement to advance IR usability in ways uniquely suitable to small academic institutions. Though Nykanen's study revealed that faculty output in repositories at small institutions is much smaller than that of large research universities (Nykanen, 2011), she did not elaborate on the reasons for the phenomenon. This author believes that in addition to challenges faced by all repositories discussed above, repositories at smaller institutions face further difficulties unique to an academic environment that emphasizes teaching, a focus that has not been well embraced by IR system design and service promotion.

This observation is supported by a focused study on current practices of IRs at master's and baccalaureate institutions (Xia & Opperman, 2010). The study affirmed that teaching takes precedence for most faculty members at these institutions as the central function of these institutions is to promote the academic success of undergraduates. Accordingly, student evaluations, curricula design, and classroom observation by academic deans carry more weight than research output in the tenure and promotion process. In Miller and Seldin's 2010 survey of over four hundred liberal arts colleges, 99.3% of respondents considered classroom teaching a major factor in evaluating faculty performance, compared to 51.8% for research (Miller & Seldin, 2014). Furthermore, science faculty — typically the biggest contributors to repositories and the most accepting of the Open Access concept — are fewer in number at these institutions, where even science majors generally stick to a liberal arts curriculum, conducting research most often as upperclassmen.

Confronted with these disadvantages in soliciting faculty publications, small institutions have accordingly switched their focus to recruiting student work. Nykanen's study reported that student work comprised 63% of materials she examined in small repositories, which included theses, undergraduate honors and award papers, essays, etc. (Nykanen, 2011). Targeting student work has enabled small institutions to adhere to the essential objective of IRs: to collect,
preserve, and disseminate the intellectual output of an institution in digital form. Otherwise, due to the lack of faculty work, digitized documents and archival materials would become the dominant content driving repository growth and stability (Xia & Opperman, 2010).

Small institutions also face challenges in staffing and funding. Unlike large research universities where staffing, systems, and facilities can be planned and resourced to anticipate emerging needs and opportunities, small institutions are usually less prepared when institutional repositories are brought on board, instead relying ad hoc on what happens to be available among existing resources and staff (Wrenn, Mueller, & Shellhase, 2009). The lack of planning, funding, and technological expertise has made it particularly difficult for small institutions to provide and maintain digital services at the desired level and scope. Hard choices must often be made among competing priorities.

3 Institutional Repository at Roger Williams University

3.1 Background

Located in Bristol, Rhode Island, Roger Williams University is an institution with approximately 3,700 undergraduate and 600 graduate students that focuses on liberal arts education but also includes six professional schools. The University Library, containing an Architecture Library branch, is the main service point to the entire university community. The University Library has been a member of the Higher Education Library Information Network (HELIN), a library consortium of eleven academic libraries and twelve special libraries primarily located in the state of Rhode Island, for over twenty years. The creation of a HELIN institutional repository was proposed by the HELIN Central Office and made possible by a two year grant from the Davis Educational Foundation that HELIN received in 2005. This initiative allowed each individual library in the consortium to establish its own repository if it chose to participate. At the time, ProQuest's Digital Commons, which was later bought back by Berkeley Electronic Press (Bepress), was chosen as the platform for storing, searching and accessing the digital materials collected by HELIN institutions. Each library manages its own repository, and the vendor then provides an umbrella HELIN site, allowing users to search various collections as one entity.

At the beginning of 2006, Roger Williams University Library, along with other participating HELIN libraries, designed the initial repository site with the vendor, trained its staff to use the platform, and, most importantly, created policies regarding collection priorities, types of material accepted, and submission procedures before launching its institutional repository DOCS@RWU. This author, assisted by two cataloging staff, has been responsible for maintaining and managing the repository, including marketing and outreach, content submission, metadata creation, and vendor communication for technical issues and site development.

Over eight years of collection development, the repository has grown to over 3,000 items (as of April 2015), including four active and two discontinued journals, four small image galleries,
3.2 Current Practice

To meet the established goal for preserving and disseminating RWU faculty scholarly output, we sent a periodic "Call for submissions" via the All-Faculty emailing system to solicit faculty publications. This practice helped build the scholarly content of the repository in its early stages and continued for a number of years until responses to the calls began to wind down. Tracking down faculty publications is the first step in the process of IR content recruitment. While many libraries search selective journal databases to identify new publications by their faculty, this approach was infeasible for us as we could not identify a recurring publishing pattern of journals to target. Nevertheless, we realized that faculty members are willing and even eager to publicize their scholarly accomplishments, although some of them are reluctant to have the full-text of their publications openly available on the website because of copyright and various other concerns.

An online Faculty Scholarship Register was therefore created to shine the spotlight on their work. Faculty were also encouraged to use the Register for a convenient up-to-date compilation of citations for their CVs or personal profiles. These practices have dramatically improved the recruitment of faculty publications. Fifty-six faculty members, a quarter of the entire faculty population, responded to the initial call with over 400 citation entries. By mid-August 2014, more than one hundred articles drawn from the Register had been added to the repository. Admittedly, the volume of submission will plateau as time goes on, but we are hoping that with occasional reminders, the registration and submission process will become habitual for faculty. After all, it provides them a venue to publicize their scholarly achievements at a small investment of time and commitment.

Promoting the IR's journal publishing platform was another strategy we employed to expand scholarly content. The majority of journals published on IR sites are open access by nature, and therefore do not require copyright clearance to post the content. When RWU's president called for a new initiative for campus diversity and civil discourse a number of years ago, several faculty members hoped to launch an online journal where students, faculty, and the administration could express a range of viewpoints on a variety of topics. During the planning stage, they considered using open source software to host the journal for greater flexibility and control, but had to abandon the idea due to a lack of the necessary computer coding and technical support capacities. Faculty members edit and contribute content, but may not be well-suited to deal with the technical components of maintaining an online journal. We presented the repository as a service that frees them from these tasks and assists them in designing a journal homepage, implementing a submission and review process, as well as installing an RSS feed. The institutional repository hosted the Journal of Reason & Respect for four years until it ceased publication. Since then, the repository has hosted three more journals sponsored by our faculty in addition to the Law Review published by the RWU Law School. These online journals supply...
the repository continuously with a broad range of content and serve as excellent examples of the utility of the service.

Adhering to policies and guidelines for standardizing submission processes, defining technical requirements, and preventing copyright infringement all presented key challenges in the early stages of the repository. Although accepted by the Faculty Senate and widely broadcasted via email and other media channels across campus, in the end these policies and guidelines were merely placed on paper with little effect. For instance, faculty submitters rarely followed instructions to download and sign an Author Submission Agreement Form and attach it to their work, perhaps deterred by the hassle. In an effort to save faculty time and streamline this process, the Library has accepted emails from faculty requesting submission as a substitute for the Agreement Form. Faculty and staff at smaller universities tend to be more familiar with each other, allowing for submission of works with informal and less comprehensive procedures: a friendly chat, email, or phone call can suffice. However, regardless of the size of the university, in order to avoid copyright infringement, a casual approach would be inappropriate when obtaining permissions from publishers, and libraries should always follow established guidelines.

Unlike faculty submissions, student submissions must adhere closely to policies and submission procedures. In order to allow the Library to post student works on the website of DOCS@RWU, it is mandatory that each student author sign the Thesis Deposit and Access Agreement Form. Still, we occasionally have to work out policy issues with faculty when students only wish to submit print copies of their theses to the Library, or only wish to make the abstracts of their theses available online. This scenario would require exceptions to the Library's requirement that all student theses be submitted electronically in full text. We accommodate these students with the permission of their thesis advisors.

Many academic libraries have banded together by forming state or regional library consortia to achieve economic efficiency. This type of partnership is especially valuable to small IRs challenged by limited funding and staffing. When the two year grant from the Davis Education Foundation ended in 2008, the HELIN consortium was able to negotiate a reduced annual subscription fee for all participating libraries, as the vendor (Bepress) recognized an opportunity to expand its market share by encouraging group memberships. DOCS@RWU was sustainable only because the fees were within the Library's financial means. In addition to cost savings, HELIN provides a venue to share knowledge, expertise, and best practices. It also helps to coordinate a collective voice to draw the vendor's attention for support.

At the very beginning, a HELIN Institutional Repository Committee consisting of representatives from participating libraries was formed to exchange information and enhance collaboration. During the initial implementation period, the Committee worked together to recommend the best organizational structure for each repository, design the template for descriptive metadata input, and consult each other for best practices in marketing the service. Every member of the Committee faced similar issues and challenges, and no one knew how to solve them all. It was the collective experience of the Committee that led to success. Also, everyone needed training in the early stages to learn how to operate an unfamiliar system. As the first to receive this training, the HELIN Central Office's Knowledge Management Librarian went to each institution in the consortium to serve as a trained trainer. She later became the go-to person to help solve technical
issues involving use of the system. Before the members could stand on their own feet, a reliable person they could turn to for expert knowledge and advice was crucial.

4 Overlooking Institutional Teaching Needs: Lessons Learned

The decision to implement the digital repository service was driven by the Davis grant and was not exclusively based on needs assessment and analysis. The essential mission of the repository as determined at its outset — to collect, preserve, and provide access to the intellectual output of faculty and students — was not well received by faculty as relevant to teaching and student learning. This mismatch between the intended benefits of the repository service and faculty expectations for it resulted in a low faculty participation rate and slow scholarly content growth as out of approximately 3,000 items in DOCS@RWU, only 300 are faculty papers. It is clear that we must shift focus from collecting faculty scholarship to providing services in greater demand among faculty.

5 The Future of DOCS@RWU

Roger Williams University is an institution that focuses on classroom teaching and undergraduate learning. The institutional repository DOCS@RWU can thrive only if it supports the University's mission and contributes to its success. It must attend to the "demand side" as prescribed by the ARL Digital Repository Issues Task Force: it needs to be as much about users as about content (ARL Digital Repository Issues Task Force, 2009). Over the past few years, technology has revolutionized education, and in response, college professors have dramatically adjusted their teaching methods. As the use of laptops, tablets, and the Internet become increasingly common in the classroom, professors will have abundant resources in digital format at their disposal. Because the institutional repository collects a range of research and instructional resources in one place and makes them accessible to students in and out of the classroom, we believe that the potential utility of DOCS@RWU in class will greatly increase its value and usage. In fact, a professor at the RWU School of Education has been asking her students to choose a resource to review from the institutional repository as a course assignment.

Also, as a focal point in the teaching and learning process, the traditional textbooks are challenged by their skyrocketing price. Teaching faculty has shown interest in creating and sharing teaching resources in lieu of expensive textbooks (Moxley, 2013). More and more IR managers have noticed this emerging trend and started hosting textbooks on their IR sites. (See, for example, Grand Valley State University OER site). In addition to text-based documents, we will further expand the use of DOCS@RWU in classroom instruction by promoting its potential for storing and presenting multimedia. We envision that professors at departments such as Dance and Performance, Graphic Design, and Music will also integrate DOCS@RWU into their teaching once they recognize its value in illustrating concepts with audio and visual examples only a click away. These IR applications are on the horizon. The Composition series in the Digital Commons@Illinois Wesleyan University serves as an excellent example. Furthermore,
imbedding institutional repositories into classroom management systems, such as Bridges as proposed by Wise, *et al.* (Wise, Spiro, Henry, & Byrd, 2007), will provide seamless access to digital assets in course content, and therefore make repositories an integral digital resource in classroom teaching.

The institutional repository could also function as a real world, practical workspace for what is learned in classrooms. For instance, the journal publishing software embedded in the institutional repository supports full-fledged professional publishing features. A RWU Creative Writing professor suggested a course-based, student-driven journal in response to our outreach for the journal publishing platform. He wanted to offer his students the opportunity to create their own amateur publications, allowing them to experience the real world journal publishing process in its entirety. His journal *Critical Conversations* is now hosted on the DOCS@RWU platform and is ready for experiment. In the same way, Graphic Design students could showcase their unique skills in their own online journals or by designing covers for other journals. Students in the sciences would also benefit by acquainting themselves with the peer-review process, an important element in scientific research and publishing.

We are anxious to see how the faculty and students respond to these IR applications, and whether or not the institutional repository will grow into a valuable tool for teaching and learning. However, by further exploring and promoting the prospect among faculty, students, and IR platform designers, we are confident that the potential applications of the institutional repository in teaching and engaging students in experiential learning will multiply.

### 6 Conclusion

The success of institutional repositories at academic institutions in general and small universities in particular relies on the expansion of service to a broad spectrum of the academic arena beyond their conventional roles of preservation and dissemination of faculty and student scholarship. Despite the unique challenges they face, repositories at small academic institutions can grow as long as they prove themselves an asset in undergraduate education. Finally, as the institutional repository platform continues to evolve in response to rapidly developing technology and opportunities for greater efficiency in a more collaborative academic environment, its value will increase and be recognized.

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http://doi.org/10.1016/j.serrev.2007.12.003


**About the Author**

Mary Wu received her Master's degree in Library and Information Studies (M.L.I.S.) from the University of Rhode Island in 1999. She worked from 2000 to 2002 as a Catalog Librarian at the Hawthorne-Longfellow Library at Bowdoin College in Maine. Since then, Mary has held the positions of Catalog/Database Management Librarian and Digital Scholarship/Metadata Librarian at Roger Williams University Library in Rhode Island. She was appointed Associate Professor in 2008. Mary led the 2006 launch of the institutional repository DOCS@RWU, and currently oversees the development of its collection along with the library's digital Scholarship program.