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A Process of Original Cataloging of Theses and Dissertations

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A process for original cataloging of theses and dissertations

Cedar C. Middleton, Jason W. Dean, and Mary A. Gilbertson

Abstract

The purpose of this paper is to describe the reasoning, methodology, and impact behind a semi-automated cataloging process for electronic theses and dissertations, including explanations of the importance of retention and addition of cataloger created metadata. The authors explain an automated process that is generated by ProQuest and student entered data, and also the addition of metadata including the subject headings, classification number, etc. The study includes a survey of the public service librarians' perceived usefulness of the cataloger and ProQuest generated metadata to describe theses and dissertations.

Alternate title: Original cataloging of theses and dissertations

Keywords: theses and dissertations, original cataloging, metadata, descriptive cataloging, subject headings, classification

Theses and Dissertations (T&Ds) are the intellectual core of a University. "Not only do [T&Ds] represent the significant research and scholarship of the university, but they are also an important historical record of [a University's] research and teaching community."[1] The University Libraries at the University of Arkansas, Fayetteville, are unusual in that they provide full catalog records for theses and dissertations produced by graduate students at the university. The University Libraries have been providing this level of cataloging for theses and for dissertations since 1906 and 1953, respectively. The methodology of this cataloging process has changed over time as the library now works closely with ProQuest in processing theses and dissertations. The work is time-consuming but results in a better user experience. This paper discusses the reasoning, methodology, and impact of this work by the catalogers at the library.

Reasoning

Theses and dissertations are a significant amount of the academic and intellectual product of a university. Students and their faculty advisors engage in many years of collaboration, research, and writing to generate original contributions to a body of scholarship in their field. This original research contributes to the reputation of a university as it is a reflection of the work of not only the student, but of the affiliated faculty, and the faculty as a whole. Therefore, as Thomas and Brubaker assert, these products are informally associated by peers and evaluators with the overall perception and reputation of the degree-granting university.[2]

Recognizing the importance to the student, faculty, and institution of these works, the University of Arkansas Libraries are committed to giving the broadest possible access to these titles. Indeed, based on the author's informal observations, the treatment and attention given to these items is uncommon in universities throughout the United States because of the extra labor

requirements. Catalogers describe these works with full-level cataloging in OCLC's Connexion client. This full level cataloging includes: an abstract, subject headings, as well as a Library of Congress Classification number. These records are then overlaid over the existing brief records in the local catalog, facilitating access for patrons searching in WorldCat, as well as the University of Arkansas Libraries' catalog. The result is the facilitation of the widest possible access for individuals seeking information, as well as enhanced exposure for both the student's work and the university.

Literature review

Existing literature includes elements of the process at the University of Arkansas, but does not describe or examine a similar workflow for electronic theses and dissertations. However, pertinent points may be extracted from the literature that support the author's assertion that though time consuming, providing full level description for ETDs is worthwhile in the additional access facilitated by this work.

The survey conducted by Hall, Hoover, and Wolverton in 2003 gives a broad picture of the variety of processes for ETDs. Like the University of Arkansas, 23 other institutions have their graduate schools coordinate the ETD programs. Also like the University of Arkansas, 7 responses indicated that they have 2 FTEs working in the ETD unit. Divergent from the majority, however, was the method of viewing an ETD – as 20 of the survey respondents indicated that the ETDs were accessed through the library catalog. Though this is true at the University of Arkansas, as each title has a record in the catalog, titles may also be accessed through ProQuest/UMI's database, as this is where the electronic files reside. Overall, these responses

indicate that the U of A is broadly similar to other institutions processing ETDs, with some exceptions.[3]

Hoover and Wolverton's 2003 article on the cataloging of theses and dissertations provides more specific insights into the description and handling of these titles. Though the majority of respondents differ in size and status from the University of Arkansas, the cataloging practices of the majority of respondents are mirrored by practices at the U of A. A combination of library technicians and catalogers assign call numbers and subject headings. Differing from the majority of respondents is the U of A practice of assigning both an LC and a local call number to ETDs. Subject access is also broadly similar, with library staff assigning LC subject headings, with the addition of local subject headings for advisor and department. Again, the U of A largely aligns with this survey, but with some exceptions.[4]

Two other articles provide insight into differing processes at other institutions. Clement and Rascoe's essay on ETD management and publishing in ProQuest gives background into the choices for managing and storing ETDs. In their article on metadata workflows for dissertations at Oregon State, Boock and Kunda focus on metadata generation done by the submitting graduate student, instead of librarians and technicians. Clement and Rascoe's article gives contrasts and comparisons between using an institutional repository and ProQuest's ETD management system. Particularly illuminating are the conclusions they make about subscription fees and preservation issues. In the Boock and Kunda article, the discussion centers around the generation of metadata and the potential time-savings that might occur as a result of this non-cataloger generated metadata. Generally lacking from their article, however, is an examination of the impact on access that student generated metadata has.[5]

Most germane to this essay are Sevim McCutcheon's 2011 article on metadata description levels for ETDs, in addition to McCutcheon, Kreyche, Maurer, and Nickerson's 2007 article on providing access of the highest quality for ETDs. McCutcheon's discussion of the value of ETDs supports the assertion that these items are among the most important and valuable "products" of a university. Her examination of different symbols used in non-library metadata is very helpful, as is her combination of author generated metadata with cataloger manipulation. In their 2008 article, McCutcheon and her fellow authors describe full level cataloging for ETDs, and their use of this term does include Library of Congress Classification Numbers and subject headings. Furthermore, the process described in that article does include uploading to WorldCat, in addition to the use of non-cataloger generated metadata that result in time savings for the cataloger and library.[6]

Methodology

Background

As mentioned above, librarians have provided full-level cataloging of theses since 1906, and of dissertations since 1953. Modes of access to these titles have changed over time, from the card catalog to the online catalog, but the goal has remained the same: the highest levels of description and access for these items. Today, library professionals create an original record to allow others to research and access their newly published theses. The care that goes into cataloging T&Ds takes a great deal of time, patience and diligence to get these records created and open for patrons to access. Because the T&Ds are original and previously uncatalogued works they require original catalog records.

In 1990, the University of Arkansas began sending dissertations to ProQuest to be scanned into their database. The University began sending theses to ProQuest in 2006. Beyond the addition of this scanning step, processing for these titles was still the same. Beginning in 2010, however, students were given the option of using the new online submission process with ProQuest, called University Microfilms International Electronic Theses and Dissertations (UMI ETD) Administrator. Subsequently, in 2012 the graduate school required all the students to submit digitally through the Administrator tool. In conjunction with this change, the library started receiving metadata in MARC format for theses and dissertations from ProQuest in 2012.

Table 1: Proquest bibliographic record

020   9781303047992
049   AFUJ
100 1   Scott, Erin E.|q(Erin Elizabeth),|d1983-
245 10 Litter conditioning is differentially affected by leaf species, phosphorus enrichment, and light availability /|cby Erin E. Scott
260 |c2013
300   70 leaves :|bill. ;|c28 cm
500   UMI 15-36441
520 3 Anthropogenic enrichment of nitrogen and phosphorus is one of the most pervasive and detrimental threats to aquatic ecosystems worldwide. In streams that rely on allochthonous basal food resources, such as leaves, nutrient pollution can result in altered food quality and decreased carbon (C) standing stocks. However, the magnitude and mechanisms of this change in quality are poorly understood. Laboratory microcosm studies were conducted to 1) quantify the response of litter C:P to a gradient of phosphorus (P) enrichment (0, 0.05, and 0.5 mg SRP/L) across leaf species with variable levels of degradability (sugar maple and oak), and 2) quantify the response of litter C:P to a range of P concentrations (0, 0.05, and 0.5 mg SRP/L) and light availability (15 and 500 mumol photons m-2 s-1). Results of the first experiment showed that litter %P increased and C:P decreased with increasing water column P concentrations and this response was greater for the more labile maple species. Carbon:P remained relatively constant through time in the low-P treatments (2600 for both maple and oak) and declined significantly in the high-P treatments (480 and 1040 for maple and oak, respectively). Results of the second experiment demonstrated that phosphorus concentrations and light availability differentially affected algal biomass (as chlorophyll a), microbial metabolic rates, and litter stoichiometry. Algal biomass responded to increased P enrichment only when coupled with greater light intensity, and respiration rates increased with P enrichment in both light levels. Litter C:P ratios decreased significantly with P enrichment with a differential response across light intensities. Our results demonstrate the complexities of nutrient pollution on forested stream ecosystem functioning where allochthonous food resources are important. The effects of nutrient enrichment on detrital quality can provide an important link to understanding how nutrient loading impacts aquatic consumers and potential biodiversity losses
502   Thesis (M.S.)--University of Arkansas, 2013

500   "May 2013"
504   Includes bibliographical references
690   Text (Electronic Thesis)
690   Advisor: Scott, Thad
690   Dept.: Crop, Soil and Environmental Sciences
856 41 |uhttp://gateway.proquest.com/openurl?url_ver=Z39.88-
2004&res_dat=xri:pqdiss&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&rft_dat=xri:pqdiss:1536441|z
Full text from ProQuest Dissertations and Theses

The special formats unit head then began examining whether the metadata from ProQuest would increase efficiency in the processing of theses and dissertations.

During this examination, although some of the data was not up to the standard desired, the abstracts in the ProQuest metadata were found to be highly desirable. Therefore, the University Libraries requested that abstracts be included with the metadata generated by ProQuest to enhance access to these items in the catalog. Based on informal conversations with the head of special formats it was determined that the reference librarians use the abstract for theses and dissertations to assist patrons in discovery for these titles. Through the abstract, reference librarians are better able to gain a better understanding of the patrons' research topics, and what students might desire in the future from the existing theses and dissertations for their own research.

One of the data elements provided by ProQuest that were less than ideal for our university were the subject headings, as the terms were generated from a proprietary controlled vocabulary created and maintained by ProQuest. This controlled vocabulary did not match the Library of Congress subject headings used in the local catalog. Therefore, the library continues to provide their own subject analysis using the Library of Congress' subject headings. As indicated by the research of Ressel, "In order to fully integrate [the T&Ds] into our collection, [they] must receive full subject cataloging. This ensures seamless searching by the patrons looking for all held items on a topic."[7]

Current Submission Process

The process of submitting a thesis or dissertation through the ETD system consists of several steps. First, the student submits their thesis or dissertation to the graduate school through the ETD administrator tool in addition to paperwork required by the graduate school in which the student suggests potential key terms. After submission, the graduate school and library continue the approvals process through the ETD administrator. This process includes checking information and formatting to conform to the requirements of the graduate school. After submission to ProQuest, a brief bibliographic record with author and title information is added to the local catalog.

Table 2: Brief Bibliographic record

```
100 1    Scott, Erin E.|q(Erin Elizabeth),|d1983-
245 10  Litter conditioning is differentially affected by leaf species, phosphorus enrichment, and light
availability /|cby Erin E. Scott
26       |c2013
300      70 leaves :|bill. ;|c28 cm
502      Thesis (M.S.)--University of Arkansas, 2013
504      Includes bibliographical references.
690      Advisor: Scott, Thad
690      Dept.: Crop, Soil and Environmental Sciences
856 40  |uhttp://search.proquest.com/pqdtft/advanced?accountid=8361|zThis thesis/dissertation is
currently being processed by ProQuest. To check if a digital version of this thesis/dissertation is currently
available, please visit this ProQuest page, and search for the item
```

Post-delivery Editing

After delivery of the completed MARC records from ProQuest, the special formats unit uses MarcEdit to edit the records. In MarcEdit, a staff member adds the bibliographic record number from the local catalog to the ProQuest record within MarcEdit so that the existing brief bibliographic record can be overlaid with the incoming ProQuest record in the University of Arkansas' Innovative Interfaces catalog. However, overlaying with the standard load table could

cause loss of important data in the existing brief bibliographic record. Therefore, a separate load table was created to protect the existing key fields so that information would not be lost when the records are overlaid. These key fields and the information protected in them are:

- The 1xx field, the advisor, and department all have a local authority record. Local staff are responsible for matching this authority work.

- Fuller information in the 300 field than that available from the incoming ProQuest record.

- ProQuest does not provide subfield c for the 245 field.

- Most of the 500 fields are created in the local catalog and are important for the record.

Furthermore, the load table protects the 100, 110, 111, 245, 300, 500, 504, and 690 fields. Essentially these fields are: the author, title, description, and notes including a reference to *Thesis (Ph.D.)--University of Arkansas, Fayetteville, year, and the department*. The library staff uses the two separate local subjects (690) for the granting department and advisor.

Table 3: Connexion Bibliographic record [Refer to Table 1 and 2]

```
020     9781303047992
050     QH541.5.W3|bS42 2013
049     AFUJ
100 1    Scott, Erin E.|q(Erin Elizabeth),|d1983-
245 10  Litter conditioning is differentially affected by leaf species, phosphorus enrichment, and light
availability /|cby Erin E. Scott
260     |c2013
300     70 leaves :|bill. ;|c28 cm
500     UMI 15-36441
520  3  Anthropogenic enrichment of nitrogen and phosphorus is one of the most pervasive and
detrimental threats to aquatic ecosystems worldwide. In streams that rely on allochthonous basal food
resources, such as leaves, nutrient pollution can result in altered food quality and decreased carbon (C)
standing stocks. However, the magnitude and mechanisms of this change in quality are poorly
understood. Laboratory microcosm studies were conducted to 1) quantify the response of litter C:P to a
gradient of phosphorus (P) enrichment (0, 0.05, and 0.5 mg SRP/L) across leaf species with variable
levels of degradability (sugar maple and oak), and 2) quantify the response of litter C:P to a range of P
concentrations (0, 0.05, and 0.5 mg SRP/L) and light availability (15 and 500 mumol photons m-2 s-1).
Results of the first experiment showed that litter %P increased and C:P decreased with increasing water
column P concentrations and this response was greater for the more labile maple species. Carbon:P
```

remained relatively constant through time in the low-P treatments (2600 for both maple and oak) and declined significantly in the high-P treatments (480 and 1040 for maple and oak, respectively). Results of the second experiment demonstrated that phosphorus concentrations and light availability differentially affected algal biomass (as chlorophyll a), microbial metabolic rates, and litter stoichiometry. Algal biomass responded to increased P enrichment only when coupled with greater light intensity, and respiration rates increased with P enrichment in both light levels. Litter C:P ratios decreased significantly with P enrichment with a differential response across light intensities. Our results demonstrate the complexities of nutrient pollution on forested stream ecosystem functioning where allochthonous food resources are important. The effects of nutrient enrichment on detrital quality can provide an important link to understanding how nutrient loading impacts aquatic consumers and potential biodiversity losses

502   Thesis (M.S.)--University of Arkansas, 2013
504   Includes bibliographical references
650 0   Aquatic ecology
650 0   Stream ecology
650 0   Biodegradation
650 0   Leaves
650 0   Plant biomass
690   Text (Electronic Thesis)
690   Advisor: Scott, Thad
690   Dept.: Crop, Soil and Environmental Sciences
856 41 |uhttp://gateway.proquest.com/openurl?url_ver=Z39.88-2004&res_dat=xri:pqdiss&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&rft_dat=xri:pqdiss:1536441|zOnline abstract from ProQuest Dissertations and Theses. At the author's request, the full text of this thesis/dissertation is not available online from June 11, 2013 to June 11, 2015
945   ccm / jwd

The 650 is not protected as subject analysis is done after the record load. There are

programming lines in the load table that remove any incoming 590 (local notes), 650 4 and 690

(subjects) fields.

Marc Tags	Description	Other information	Load table protected
1xx	Author	Local authority record	Yes
245	Title	Keeps subfield c	Yes
300	Description	All information needed	Yes
5xx	Notes	Local authority records	Yes
690	Local subjects	Local authority records	Yes

Table 4: MARC Information description

After the records from ProQuest are loaded into the catalog [Refer to Table 2] the special formats unit then exports the newly overlaid brief bibliographic records from the online catalog to save files in Connexion to edit and update. Editing within Connexion includes the subject headings, and classification number; this process upgrades the records to full-level.

Final Upgrading

The process of final upgrading has several steps. As part of the submission process paperwork, students are asked to provide some key terms to assist the librarians in cataloging the thesis or dissertation and providing subject access. Typically these student-provided terms are closer to keywords than subject headings, but they do assist catalogers in describing the intellectual content of a work more accurately. The terms given by the students, while useful, can be too broad or not broad enough for use as subject headings. For example, if there is a dissertation about computers during the world wars, the student might only give keywords for the wars and not terms pertaining to the computers used at that time. Also, many students only provide the degree they received. If the student does not provide keywords that are useful, the abstract then is a focal point for the generation of subject headings. However, for some items the abstract is not optimal in assisting the cataloger with subject analysis, so the text of the item is examined and the terms from the student (if they were provided) are consulted again. These together yield sufficient information for subject analysis. Once the subjects and classification number have been added and the title specific URL checked for connectivity, the full record is uploaded to WorldCat and then the local catalog's provisional record is overlaid with the OCLC full level record from Connexion. [Refer to Table 3] At this time, the special formats unit is still working on increasing the efficiency of this process. But for now the process has been working effectively and the unit has been able to update records with few problems. However, a few

small adjustments have been made to increase access. As there is a delay in the availability of the records from ProQuest, a general URL is added to the brief bibliographic records so that if the T&Ds are published before they are described with a full-level bibliographic record the patrons can still find the document in the ProQuest database.

Impact

In order to demonstrate impact of full-level cataloging of theses and dissertations, the authors sent surveys through the free online survey generator Survey Monkey to the twenty reference librarians at the University of Arkansas. Of these twenty, eight replied. The authors were able to access the survey results through the Survey Monkey. Each librarian that responded was not required to provide their name, and the results were blinded. There was no incentive for survey completion. Respondents were asked to rank the usefulness of the processing of theses and dissertations on a scale of one to five, with one being not that useful, and five being very useful.

Presented here are the questions presented in our survey, the results, and the comments from the 8 respondents out of 20 surveyed.
First question:
   "Based on your experience with other institutions access to thesis and dissertations, how useful for you or your patrons are the University of Arkansas cataloging records for these items?"
Results:
   Same = 1
   Not that Useful = 0
   Useful = 2
   Much More Useful = 3
   Very Useful = 0
   Not applicable = 2
Comments:

I don't know if that is just because I know how to find them here. But sometimes on other library's web pages, it is difficult to determine where they have Thesis and Dissertations . . . are they in their catalog? In an institutional repository? Or through some other links? I haven't had experience finding dissertations and theses in another library's catalog, but I do think it is useful to have access to them here at Arkansas.

Second question:

How useful is it to have bibliographic access to our thesis and dissertations?

Results:

Same = 0
Not that Useful = 3
Useful = 0
Much More Useful = 0
Very Useful = 5
Not applicable = 0

Third question:

How useful is it to have subject headings in catalog records for thesis and dissertations?

Results:

Same = 0
Not that Useful = 0
Useful = 0
Much More Useful = 4
Very Useful = 4
Not applicable = 0

Comments:

Very useful . . . sometimes patrons (or librarians) do not have the author or title exactly right . . . so subject is very useful in addition to department and advisor.

Fourth question:

How useful is it to have classification numbers in catalog records for thesis and dissertations?

Results:

Same = 0
Not that Useful = 1
Useful = 4
Much More Useful = 2
Very Useful = 1
Not applicable = 0

Comments:

[Brings] this option forward to the undergraduate looking for books in subject areas. Also, allows us to attach a cost to an item that ends up "lost".
I don't recall ever needing a call no . . . except with print items of course.

Fifth question:

How useful is it to have abstracts in catalog records for Thesis and Dissertations?

Results:

Same = 0

Not that Useful = 0

Useful = 1

Much More Useful = 4

Very Useful = 3

Not applicable = 0

Comments:

I think it would be useful, but not essential.

Sixth question:

How useful is it to have the basic access, with a link to ProQuest, in theses and dissertation records currently in process?

Results:

Same = 0

Not that Useful = 0

Useful = 0

Much More Useful = 5

Very Useful = 3

Not applicable = 0

Comments:

Great! Great! This is great! Thank You!

Conclusion

Original cataloging of theses and dissertations is an important product of the University of Arkansas Libraries. With the special format unit's efforts and many others involved in the process, providing subject headings in the records improves patron access for the theses and dissertations and helps increase exposure and access to the theses and dissertations to a patron audience far wider than the local catalog. As seen in the survey above, subject headings are important to the University libraries' reference librarians through their front-line work in assisting students and patrons with their research. In thinking about their impact, the authors of

this article assert that the most important information provided by the full-level cataloging and processing, for the thesis and dissertations are: first, having access to the bibliographic information in the interlude between submission and publication of the work, second, subject headings, third, an abstract, fourth, a functioning link to the online thesis or dissertation and fifth, the classification number. All of these are provided by the special formats unit in order to support the reference librarians in assisting patrons in not only finding more information, but also assisting students in facilitating better research. These assertions were supported by the results of the survey mentioned above. Finally, not only does online access increase the visibility of the T&Ds but the full level original records do as well, ensuring that the intellectual product of the university is seen as widely as possible.

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[1] Michael Boock and Sue Kunda "Electronic thesis and dissertation metadata workflow at Oregon state university libraries," *Cataloging & Classification Quarterly* 47, no. 3-4 (2009): 297-308, accessed September 12, 2013, http://www.tandfonline.com/doi/pdf/10.1080/0163937092737323.

[2] Murray Thomas and Dale L. Brubaker "Theses and dissertations: a guide to planning, research, and writing," (Westport, Conn: Bergin & Garvey, 2000), 1-3.

Bernard Berelson "Graduate education in the United States," (New York: McGraw-Hill 1960), 172-177.

Paul D. Isaac, Stephen V. Quinlan and Mindy M. Walker, "Faculty Perceptions of the Doctoral Dissertation," in *Graduate Education in the United States*, ed. Maresi Nerad, Raymond June, and Debra Sands Miller (New York: Garland, 1997), 232.

[3] Susan L. Hall, Lona Hoover, and Robert E. Wolvert "Administration of electronic theses/dissertations programs: a survey of U.S. institutions," *Technical Services Quarterly* 22, no. 3 (2005): 1-17.

[4] Lona Hoover and Robert E. Woolverton, Jr. "Cataloging and treatment of theses, dissertations, and ETDs," *Technical Services Quarterly* 20, no. 4 (2003): 3-57.

[5] Gail P. Clement, Fred Rascoe "ETD management and publishing in the ProQuest system and the university repository: a comparative analysis," *Journal of Librarianship and Scholarly Communication* 1, no. 4 (2013): 1-28.

[6] Sevim McCutcheon "Basic, fuller, fullest: treatment options for electronic theses and dissertations," *Library Collections, Acquisitions, & Technical Services* 35 (2011): 64-68.

Sevim McCutcheon, Michael Kreyche, Margaret Beecher Maurer, Joshua Nickerson "Morphing metadata: maximizing access to electronic theses and dissertations," *Library Hi Tech* 26, no. 1 (2008): 41-57.

[7] Maggie Ressel and Vicki Toy Smith "A new approach to thesis subject analysis: a collaborative success," *Cataloging & Classification Quarterly* 26, no. 3 (2009): 41-49, accessed September 12, 2013, http://www.tandfonline.com/doi/pdf/10.1300/J104v26n03_05.