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Rodríguez, Ketty

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ELECTRONIC THESES & DISSERTATIONS (ETDS) : A LITERATURE REVIEW

Ketty Rodríguez

ABSTRACT

The increased sophistication and availability of technology in daily life have changed the expectations of library users which demand remote access to full text resources including theses and dissertations. The convergence of technology, open source initiatives, and emerging new paradigm on intellectual property rights have encouraged Electronic Theses and Dissertations (ETDs) projects. The purpose of this paper is to conduct a literature review looking at the evolution of bibliographic control and access of theses and dissertations including (ETDs) initiatives and the identification of persistent issues and concerns on the implementations of ETDs projects. The management and access to thesis literature at the University of Puerto Rico, Rio Piedras Campus is also covered.

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Introduction

Technological advances, the presence of Internet, open source initiatives and emerging new paradigms on intellectual property have encouraged interesting projects in the control and access of theses and dissertations in many institutions in the United States and internationally. For the purpose of this paper the author uses thesis and dissertations interchangeably.

These projects are at different stages of development and involve posting of Electronic Theses and Dissertations (ETDs) full text on Internet. Despite these encouraging developments there are small and large academic libraries which are hesitant to initiate ETDs project. The purpose of this paper is to conduct a literature review on the evolution of bibliographic control and access of thesis literature including ETDs initiatives and the identification of persistent issues and concerns confronted with the implementation of ETDs projects.

From the point of view of the institution the value of thesis literature is both critical and strategic for various reasons. Thesis literature could be an element in assessing quality of faculty or even a program, it represents a portion of the original research conducted at the institution, it could be used as a tool in grant seeking processes, and for accreditation purposes.

The experience of reference librarians at the Gerardo Sellés Solá Library, Faculty of Education, at the University of Puerto Rico, Río Piedras Campus is that thesis literature is heavily used by both faculty and students. Reference librarians are facing problems associated with the increasing incorporation of multimedia into theses. For example, a thesis format could be a DVD or CD-ROM or a printed thesis could be accompanied by a DVD or CD-ROM. Sometimes the DVD or CD-ROM cannot be viewed using the current technology available at the library. In this case students fail to access the information since theses do not circulate outside the library. There are other instances where no information is found on the DVD or CD-ROM and the reference librarian is confronted with the problem of determining who is responsible for the damage or blank DVD or CD ROM. The increased sophistication and

availability of technology in daily life have changed the expectations of library users which demand remote access to full text resources including theses. Thesis literature usage could be increased even more if these resources were more readily accessible to users.

Bibliographic control and access to thesis literature

Despite the value of thesis literature for research, it remains elusive and difficult to access for many reasons. One of the reasons is that theses are part of the grey or fugitive literature. There are many definitions for grey literature. A consensus definition for grey literature was developed at the International Conference of Grey Literature in Luxemburg in 1997 and states that “grey literature is that which is produced by government, academics, businesses, and industries both in print and electronic formats, but which is not controlled by commercial publishing interests and where publishing is not the primary activity of the organization” (Lo 2000, 26). The difficulties associated with grey literature, such as, lack of bibliographic control, difficult physical access, and acquisition are due primarily to the fact that this literature is produced by research, educational institutions or professional societies, and intended for low distribution or limited readership. Thesis literature is of particular importance to universities because it represents a portion of the original research conducted at the institution, and ultimately reflects on the image of the institution. The lack of commercial significance and criticism of the significance of thesis literature do not diminish the value of thesis literature for research.

Thesis literature at the University of Puerto Rico

The management and access to thesis literature at the University of Puerto Rico, Río Piedras Campus, is shared by the Office of the Dean of Graduate Studies & Research, the Library System and several independent libraries. The Office of the Dean of Graduate Studies & Research is the entity issuing policies pertaining to regulations on research, format and procedures for submission of

thesis, dissertations, and projects for all Graduate Schools and Faculties. In 1997, the Office of the Dean of Graduate Studies & Research issued a mandate requiring that all doctoral dissertations be submitted to University Microfilm International (UMI). However, not all the Graduate Schools and Faculties comply with the mandate, those that comply are the faculties of Education, Social Sciences, and Humanities (Matos 2004). This action helps with access to theses via the Library System's subscription to Dissertation Abstracts International (DAI) database.

It is not clear how many library units there are at the University of Puerto Rico, Rio Piedras Campus. The information found in the sources consulted differs as to number of units, for example, in the "*Informe de Autoestudio, Sistema de Bibliotecas Universidad de Puerto Rico, Recinto de Rio Piedras*", of April 2004, prepared for the Middle States Association accreditation visit states that the Library System consists of the "Library units located in the José M. Lázaro Building plus 11 units outside the Lázaro building", (p.66), while on page 69, it says there are "10 library units outside the Lázaro building." But, González Pratts (2006, 4) states that the Library System is composed of 23 library units. However, a look at the official webpage of the Library System at <http://www.biblioteca.uprrp.edu> there were a total of 28 library units at the Rio Piedras Campus. An analysis of the information on the webpage and assuming that González Pratts, is correct, then there are five independent library units. Of these, it is well known that the Law and Architecture libraries are independent units. The Library System issues policy regarding processing, storage, preservation, collection development, and circulation, of library materials including thesis literature. The independent libraries issue their own policies. The Library System policies must adhere to guidelines issued by the Office of the Dean of Graduate Studies and Research, pertaining to thesis literature.

The cataloguing process is centralized for those libraries belonging to the Library System. However, stagnant budgets, personnel reduction, and poor technological support have resulted in a large backlog in the processing of thesis literature, thereby limiting the access to this primary source of information. The cataloging department lacks a policy on processing material by

priority (such as research or reference material). Instead, collections by discipline are assigned to cataloguers, as a result one cataloger could be responsible for up to six collections.” (González Pratts 2004) This explains the delays of up to two years in processing thesis literature. Another element which impinges on access to thesis literature is current circulation policy of the Library System, which forbids circulation outside the library and no photocopy privileges for all catalogued theses. There is virtually no access to non-catalogued theses, unless they were included in DAI. The Library System lacks a uniform procedure to provide access to theses waiting to be catalogued. Some libraries which are part of the system, like the Gerardo Sellés Solá Library, provide limited access through an author-title list, without subject headings to the latest copies of theses deposited, but not yet catalogued while others simply do not circulate thesis until they are catalogued.

Historical evolution of bibliographic control and access

Bibliographic control and access to thesis literature

Bibliographic control and access to thesis literature is the responsibility of the degree granting institution. However, (Banks 2004, 165) stated that “accessing grey literature is a challenge in all fields of scholarship”. It is known that thesis literature is a unique category of grey literature. The lack of visibility and lack of commercial significance do not diminish the value of thesis literature for research. Bibliographic control of thesis literature appears to be initiated from the list of titles and abstracts provided by individual universities, to Charles A. Flagg’s *A List of American Doctoral Dissertations* started by the Library of Congress in 1913 and published until 1940. Then, in 1938, Microfilmed Abstracts began at Ann Arbor and became University Microfilms International (UMI), the forerunner of Dissertations Abstracts International (DAI). UMI initially started with only five universities, and became a centralized repository of thesis literature controlling sales of thesis literature (López 1988). Today many institutions granting doctoral degrees participate in the DAI program which generates indexes in both hard copy and online through

commercial database services. UMI took a passive role on thesis sales and distribution, requiring a set of additional procedures for librarians in order to develop thesis collections. But when UMI became Bell & Howell Co. in 1985, a computerized service called Dissertation Direct based on institutional profile was initiated. The purpose of this service was to assist librarians in the development of thesis collections. Universities that choose to participate in the DAI Program send their doctoral theses to UMI, but, in order to have access to DAI indexing & abstracting, archiving, and marketing services, an annual subscription fee must be paid. Subscriptions costs vary depending on several variables. A typical institution subscription as of 2003 to only indexing and abstracts services may cost more than \$5,000 annually to as much as \$21,000.00 for indexing & abstracts and full-text selectively from 1993 onward (Rodríguez 2002). The cost of a thesis (as of 2004) depends on the format and delivery medium (e.g., microfilm, paper, electronic) ranging from \$31.00 for electronic to as much as \$66.00 for a hard copy.

Cataloging of thesis literature is a costly and time consuming endeavor since it requires original cataloging. At a time where most libraries are understaffed, the quick processing of theses is a real challenge. This results in long delays in processing this material which run contrary to the need for current research of graduate students (Kushkowski, Parsons and Wiese 2003). Technical services librarian's complaints regarding thesis literature are centered on the "difficulties stemming from classification, of handling processing, storage, binding, printing, assigning appropriate subject headings, shelving and cataloguing." (Patterson et.al 1977) and (Boyer 1973).

UMI has been an interim but partial solution to tackle the special handling and processing activities necessary for this type of literature. Although UMI provides bibliographic control and access to thesis literature via its indexing and abstracting services, yet the institution granting the degree must provide cataloguing or some other means of organization of theses to facilitate the retrieval of the actual physical item or title. Costs associated with participating in the UMI program and costs associated with original cataloguing of locally produced thesis along with research

findings that suggest that graduate students favor current research in most disciplinary groups, should generate continuing interest on the question of how best provide access to locally produced thesis literature.

History of Electronic Theses and Dissertations (ETDs)

Advances in technology, open access initiatives, and institutional interest to take an active role and control over its own intellectual product without intermediaries, have pushed many institutions to post full text theses on the Internet. The history of ETDs starts with a meeting convened by Nick Altair of UMI in Ann Arbor Michigan in 1987 between Virginia Tech University, the University of Michigan and two fledging software companies: Arbor Text & Soft Quad (Fineman 2003). Later, with funding from Virginia Tech in 1988, the Standard Generalized Markup Language (SGML) was developed, followed by the Portable Document Format (PDF) of Adobe's Acrobat in early 1990. Meanwhile, the Coalition for Networked Information (CNI), the Council of Graduate Schools, and UMI efforts on ETDs initiatives continued to evolve (Cornell University Library Report 1998). In 1993, Southeastern Universities Research Association and Southeastern Library Network (SOLINET) included ETDs efforts in regional electronic library plans.

In 1996 ETDs gained momentum with funding from the U.S. Department of Education, becoming the high visibility, international, free, voluntary federation known as Networked Digital Library of Theses and Dissertations (NDLTD) (Fineman, 2003).

The purpose of NDLTD is to promote the adoption, creation, use, dissemination and preservation of e-theses (www.ndltd.org). On August 29, 1997, there were 20 institutions involved in the project, including universities from countries outside the United States, such as South Africa and Germany (Orlans 1997). In 2003, there were 165 member institutions, 147 of which are academic institutions from United States and abroad (Fineman 2003).

The movement to ETDs is international in scope with many interested countries. These initiatives represent a larger movement toward information freedom (Jones and Andrew 2005). Universities,

where scholarship is looked at for its intrinsic value rather than its commercial value are important stakeholders in that movement. In the US, Virginia Tech University has been a pioneer institution, where since 1997, students have been required to submit theses electronically. The benefits of this approach are: students save money, shelf space is saved, a digital library is built, collaboration among universities is promoted, and students are empowered to create multimedia presentations (Cornell University Library Report 1998).

There are other institutions in the United States which have developed successful ETDs initiatives such as the OhioLINK Electronic Theses and Dissertation created under the direction of the Ohio Board of Regents Advisory Committee on Graduate Study, now affiliated to NDLT (Albanese 2001). However, along the way there had been successes and failures in ETDs initiatives (Dorman 1998). There are other independent initiatives in foreign countries working on ETDs projects such as the United Kingdom (Copeland et al 2005), India's project (Urs and Raghavan 2001) and Brazil (Marcondes and SayAlo 2003).

Issues and Concerns of ETDs

The literature review revealed that ETDs appears to be a "hot topic" for large research libraries, while it could be a costly alternative for small libraries. Concerns on costs, preservation and copyright and intellectual property rights issues seem to be persistent throughout several articles.

Cost Control and Preservation Issues

The need for access to e-theses collections in perpetuity made it necessary to consider sustainability and a long-term commitment by institutions to provide the human and technical resources necessary to support an e-theses repository (Copeland et al 2005) In 1998, the Cornell University Library staff stated that implementation of an ETD Project at Cornell Library would have required around \$20,800.00 plus staff and student support and that access to technology was still limited for smaller libraries (Cornell University Library Report, 1998). Today (as of 2006) these conclusions

are still valid not only for small libraries but for large libraries as well. Cornell University Library Report provides an excellent discussion on the development of ETDs, the Virginia Tech initiative, NDLTD project, benefits and costs involved in ETDs projects and why several large libraries in the United States chose to delay their participation. Copeland et.al (2005) described the implementation of three ETDs projects in the United Kingdom, which discussed preservation, migration issues, retrospective digitization and rights management, interoperability, administrative issues (such as workflow pattern and institutional regulations), copyright, intellectual property issues, and culture change. Another article about an e-theses archive in UK discussed the theoretical aspects and practical consideration surrounding an e-theses archive including software and documentation issues, university's regulations, rights, royalties and permissions, concluding that open access and open source are a natural and forward looking way to develop e-theses repositories (Jones and Andrew 2005) .

Copyright and Intellectual Property Rights

Copyright and Intellectual Property Rights (IPR) are concerns for those institutions establishing e-theses repositories and the authors who are providing the content. ETDs and paper theses and dissertations are afforded equal copyright protection under the law, regardless of the author's nationality or domicile, and whether or not the copyright is registered (Fineman 2003). Students, professors and administrators at the English and History Departments opposed Ohio State University plan to put dissertations online. While the University claimed the policy conforms to the University's mission, students and administrators objecting the policy say that posting the documents online could reduce student's chances of publishing the dissertation in journal or university presses, with the implication of whether that was going to take control of the copyright out of the hands of the students and into the hands of the university (Carlson 2003).

Referring to The United Kingdom (UK) Copeland, lists several developments which offer help in clarifying the route to follow regarding IPR, among these are the increase in the availability of

advice and an increased awareness of the need for students to understand the IPR issue (Copeland et al 2005). Andrew's paper on intellectual property of e-theses examines ownership of copyright within theses, the rights and responsibilities of authors, institutions, end users, and third parties regardless the medium of publication for theses and dissertations. It includes several useful appendices that state legal requirements for publication of e-theses. This paper, although written from the point of view of the United Kingdom IPR laws, applies in many ways to the United States IPR laws. UK also has the equivalent of "Fair use" of the US Copyright law which is called "fair dealing" and many uses of e-theses are protected by the "fair dealing" (Andrew 2004) .

This literature review revealed that problems encountered by many libraries such as poor technological support, cost control, copyright and preservation issues, and the need for changes in institutional culture were also reported by other institutions. However, there are "many researchers, universities and libraries [which] view ETDs not only as a wave of the future but a tsunami that we have no choice but to ride" (Beaven 2004, 46). The implementation of an ETD project is certainly a concern for even larger academic libraries in Puerto Rico but it is also a hope to improve access to thesis literature. If the goal is to improve the access and availability of thesis literature by taking advantage of current technological advances, the University of Puerto Rico Rio Piedras Campus should consider the usage patterns of thesis literature, material obsolescence level by discipline, and the strong tendency of graduate students to use current research, the increase of the incorporation of multimedia into thesis literature, and the need for preservation of this type of material. Furthermore, it must consider the current administrative structure of the libraries in the campus, and the level of technological support for libraries. Ideally it must strive to provide a uniform, consistent and predictable way to manage thesis literature providing access to current as well as old literature, accommodating the new multimedia formats and complying with current copyright and intellectual property rights.

If an ETD project is initiated at the University of Puerto Rico it is important to keep in mind the following points to facilitate the process:

- The ETD initiative must be a collaborative project involving all the libraries at the University of Puerto Rico, Río Piedras Campus and the Office of the Dean of Graduate Studies and Research.
- Education on academic honesty and intellectual property rights must be provided to the university community.
- The project should be flexible taking in consideration the concerns of students, providing training for students on the use of technology for submission of theses.
- The University of Puerto Rico's libraries must provide access and preserve the product of its collective research
- The only proven reliable format for preservation is still microfilm or paper copies
- ETDs are needed to ease access and dissemination of knowledge yet we should not become too dependent on electronic-only options.
- The project must have full administrative support with an adequate budget
- There are advantages and disadvantages of each one of the four different options in dealing with ETDs available to universities (Beaven 2004).

The options are:

- ETD copies with many electronic backups
- ETD with microfilm backup
- ETD with archival paper backup
- Combination of the three

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