Electronic Theses and Dissertations (ETDs)

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INTRODUCTION

Academic libraries around the world are seeking to take advantage of the powerful forces that transform higher education, including new and rapidly changing technologies, an abundance of digital (mostly open access) resources in a myriad of formats, and changing practices in how scholars communicate and disseminate their research and creative work.

Theses and dissertations, the monograph-length essays required for graduate degrees from institutions of higher education, have evolved with the technology. Electronic Theses and Dissertations (ETDs) constitute the primary contributions to a community of research (Ramirez et al., 2014). The term "Electronic Theses and Dissertations" (ETD) is used primarily to differentiate between analog theses and dissertations (paper, microfilm) and their digital counterparts (digital objects). Since 1998, academic institutions increasingly publish theses and dissertations that are born digital.

BACKGROUND

As forms of scholarship evolve, so do users' and creators' expectations. Theses and dissertations represent part of the historical record of graduate education at the institution. Those produced prior to the advent of the photocopier were created by the use of carbon paper. However, often in the domain of music, the need for accompanying material required the student to attach a separate sheet with the musical notation to each copy. Students attached photographs and illustrations, predominantly black and white, in much the same manner.

The first electronic theses and dissertations (ETD) project was launched in 1987 by a business company and a long-term vendor of theses and dissertations for academic libraries, University Microfilms International (UMI), by converting its large collection of dissertations on microfiches and microfilms going back to 1939 into electronic form. The first non-profit ETD hosted by a university was launched ten years later, in 1997, at Virginia Tech, which made electronic submission of theses and dissertations through its ETD system a requirement for the university's graduating students (Ramirez et al., 2014). Virginia Tech University, along with representatives from UMI and the American Council of Graduate Schools, was one of the founders of the Coalition for Networked Information's joint project, with the goal to collaboratively develop collections of ETDs. In 1995 this resulted in creation of the Networked Digital Library of Theses and Dissertations (Fox et al., 1997).

Since the late 1990s, an increasing number of academic institutions have mandated the electronic submission of theses and dissertations. Today, textual dissertations need only be in a word processing file and converted to a more permanent and unchangeable file format to become Electronic Theses and Dissertations (ETDs). The current digital submissions of ETDs experienced significant increased usage of graphics or multimedia contents.

During the analog age examples of handwritten music had to be glued into the dissertation, with the typescript below it; this included attaching the original music on the carbon copies. With the introduction of musical software (Finale, Sibelius) or imaging software, writers could place these materials inline inside the dissertation. A move to an all-digital means of providing electronic theses and dissertations is accelerating their discovery and facilitating their use, value, and impact in research.

Accompanying Materials

Rebecca Lubas (2009) and Cedar C. Middleton, Jason W. Dean, and Mary A. Gilbertson (2015) present adequate processes for the cataloging and metadata creation of homogenous textual dissertations. However, dissertations increasingly have accompanying materials, most prevalent in music and the performing arts: these have included audio tapes, compact discs, or video recordings of recitals, concerts, and lectures. Traditionally, these audio tapes, either in reel-to-reel or audio cassette format, or videocassettes, in various configurations, were difficult to preserve. Equipment also went out of date, as certain formats became dominant. Beta and U-Matic declined into more limited use as VHS became the standard for videocassettes. Discs, either CDs or DVDs, became the norm during the 1990s.

Since the introduction of ETDs, illustrations have become predominantly color, particularly in the arts and sciences. In addition to increased usage of graphics, those in biological and chemical fields include video demonstrations of their experiments, or may draw the elements and the design of molecules. Today, these are all submitted as streaming audio files or audio visual files and integrated seamlessly with the original ETDs.

Copyright Issues

While increased availability of interoperable Open Access content helps to integrate and enhance ac-cess to diverse digital resources, they also bring about great challenges for traditional policies. There have been some concerns, questions, and misconceptions about various issues, ranging from intellectual property to quality issues. Two of the primary concerns about ETDs and their accompanying materials are copyright and fair use. Musical and artistic works created after 1923 are held in the creator's copyright until 75 years after that creator's death, due to the Berne Convention Implementation Act of 1988. Musical scores may be either brief examples that support the author's thesis, or comprise the primary contents of the thesis, as is done in new editions of music. Additionally, this affects open access to performances (audio or video) of these compositions, as it affects public performance rights (Dougan, 2011). Due to this, many institutions limit access to these recordings to those enrolled in classes or patrons on the campus. Open access has also been a concern for emerging authors wishing to publish their research in peer reviewed publications. Although some scholars consider this issue to be contentious, Ramirez et al. (2014) has alleviated this concern, stating that the thesis as a non-peer reviewed paper does not constitute double publishing.

Access and Cataloging

As forms of digital scholarship evolve, so do users' and creators' roles and expectations. The Open Access (OA) movement has become increasingly important in shaping the ways that academic libraries provide services to support the creation, organization, management, and use of digital contents. Making ETDs Open or the removals of barriers (pricing, technical and legal hurdles) facilitates successful management of ETDs across the entire life-cycle to ensure their preservation and continuous availability in a manner that current and future users expect. Even though some ETDs are restricted to their specific institutions' users, consulting the metadata description may convey sufficient information, and can be adequate for

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