

2022

Mind the (Training) Gap: A Case Study in Assessing Metadata Competences by Transforming Records for a Multi-System Migration

Dana Reijerkerk
dana.reijerkerk@stonybrook.edu

Kristen Nyitray
Director, Special Collections and University Archives, Stony Brook University Libraries

Follow this and additional works at: https://commons.library.stonybrook.edu/library_articles



Part of the [Library and Information Science Commons](#)

Recommended Citation

Reijerkerk, D. & Nyitray, K. J. "Mind the (Training) Gap: A Case Study in Assessing Metadata Competences by Transforming Records for a Multi-System Migration." In Marlee D. Givens and Sofia Slutskaya (eds.), *Transforming Technical Services through Training and Development* (ALA Editions, 2022).

This Book Chapter is brought to you for free and open access by the University Libraries at Academic Commons. It has been accepted for inclusion in Library Faculty Publications by an authorized administrator of Academic Commons. For more information, please contact mona.ramonetti@stonybrook.edu, hu.wang.2@stonybrook.edu.

CHAPTER 7

MIND THE (TRAINING) GAP

A CASE STUDY IN ASSESSING METADATA COMPETENCES BY TRANSFORMING RECORDS FOR A MULTI-SYSTEM MIGRATION

Dana Reijerkerk and Kristen J. Nyitray

Over the past three decades, the emergence of digital repositories has required the skill sets of technical service professionals to adapt and evolve. Cataloging practice has enlarged from workflows focused on bibliographic description to metadata creation for the long-term preservation of digital assets. The skill sets required for this work are defined in various professional and technical publications; chief among these is “Core Competencies for Cataloging and Metadata Professional Librarians,” or “Core Competencies for Cataloging” (Cataloging Competencies Task Force 2017), a document published by the Association for Library Collections & Technical Services as a supplement to the ALA’s “Core Competences of Librarianship” (American Library Association 2009).

In libraries, metadata (data about data) is a collection development tool that embodies core library functions such as acquisitions, provenance, context, rights, and preservation. Metadata is comprised of three distinct interconnected types—descriptive, administrative, and structural—and ensures that the integrity of digital files is maintained (Library of Congress 2005). Metadata’s prescribed architecture and construction of elements provides a mechanism for system-independent information retrieval and access. Integral to developing metadata records is adherence to best practices, controlled vocabularies, and standards, including Dublin Core semantic specifications (Dublin Core Metadata Initiative 2020). The implementation of these

activities relies on an organization's investment and commitment to equipping staff with the knowledge and professional training needed to meet both technical benchmarks and stakeholder expectations.

This chapter discusses a multi-department collaborative project to reprocess digitized university art exhibition catalogs in an academic library at an R1 research university. It examines the challenges to legacy metadata remediation, the implications of a lack of training with migrations, and how to manage the expectations of internal repository stakeholders. Furthermore, it prioritizes the importance of organization-wide training in repository management, and positions a culture of continuous learning as a prerequisite for fulfilling the library's mission.

THE PILOT PROJECT'S CONTEXT

In 2020, the ongoing multi-system migration and system upgrade exposed a pressing need to reimagine training and institute workflows for repository management. Stony Brook University Libraries (SBUL) embarked on a pilot case study to assess the viability of migrating metadata from four legacy repositories to one platform, DSpace 6. This pilot project was undertaken to determine the challenges to migrating legacy digital assets, specifically the preparedness and readiness of staff to remediate metadata. The project was initiated by two librarians who possessed historical knowledge, technical expertise, and education in digital asset preservation. Digitized collection of university art exhibition catalogs was selected to test and study, on account of its finite extent of 127 items and its single file format (PDFs).

To assess the readiness, preparedness, and competencies of cataloging and metadata professionals, the quality of legacy metadata was examined and the retrievability of digital items was tested. Through a phased assessment process, the findings were mapped to core skill sets for creating metadata records. The results identified and informed areas of training emphasis that

needed investment at the organizational level. This study would also be used to make the case for the university to cover training costs and to increase its overall support for professional growth and development activities

ASSESSMENT SOURCES AND FRAMEWORK

Several sources guided the pilot project's planning and framework. Two SBUL rapid-assessment benchmark reports for digital preservation were used to measure the state of SBUL's digital repositories (Reijerkerk 2020, 2021); the SBUL's digital assets librarian evaluated the digital preservation capabilities of the libraries in 2020–2021 using the Digital Preservation Coalition's maturity modeling tool, the Rapid Assessment Model (Digital Preservation Coalition n.d.). Skill set competencies were drawn from the "Core Competencies for Cataloging" and the "Trustworthy Repositories Audit & Certification (TRAC) Criteria and Checklist," a best practice tool with metrics for assessing and auditing repositories (Center for Research Libraries and OCLC 2007). To improve the access and discoverability of its digital content, the SBUL endeavored to transform the art exhibition catalogs' item-level records in adherence to accepted standards found in the "Dublin Core Metadata Best Practices" (Collaborative Digitization Program 2006). A six-part, phased plan was developed for the assessment process:

Phase 1: Assessing the existing legacy metadata.

Phase 2: Recording and diagnosing inconsistencies, errors, and absences in the metadata.

Phase 3: Mapping the findings of phases 1 and 2 to core metadata skills and competencies.

Phase 4: Identifying training gaps.

Phase 5: Transforming the metadata.

Phase 6: Articulating staff development needs and recommending training opportunities.

Phase 1 centered on investigating the current state of item-level metadata in the records of the 127 art exhibition catalogs. This review included inspecting the types of metadata present and the elements, naming conventions, and data structures in each record. Phase 2 focused on pinpointing and logging errors and omissions in the records in consultation with DSpace documentation and accepted metadata standards. The item records were scrutinized for evidence of the three types of metadata as defined by the “Dictionary of Archives Terminology” (Society of American Archivists 2005–2021). Given the limited historical documentation available for the collection of art catalogs, several components of the digital asset life cycle were investigated: provenance, adherence to content standards, system functionality, and digital preservation actions. The findings of phases 1 and 2 were mapped in phase 3 to the skill and ability competencies delineated by the “Core Competencies for Cataloging” (Cataloging Competencies Task Force 2017). In phase 4, training and knowledge gaps were identified based on the standards articulated in the benchmark reports and from information compiled from the first three phases. (Figure 7.1 shows how knowledge gaps can be mapped to skills and core competencies.) Phase 5 concentrated on remediating the architecture for the record template, normalizing content, and adding enhanced-level cataloging elements. Finally, phase 6 outlined priorities and recommendations for staff training based on the totality of the assessment.

FIGURE 7.1. MAPPING: SKILLS, COMPETENCIES, AND KNOWLEDGE GAPS

Skill & Ability Area	Core Competency	Knowledge Gaps	Examples
Application of conceptual frameworks, standards, and principles within a bibliographic system	Formulates consistent data by applying the Dublin Core metadata content standard	Inconsistent use of data element fields and content standards	Records with conflations of RDA, AACR2, and MARC standards
Application of conceptual frameworks, standards, and principles within a bibliographic system	Disambiguates creators, contributors, titles/series	Incorrect and/or inconsistent use of fields, naming conventions, subjects, and keywords	Artist names not represented in metadata; names of university and gallery applied inconsistently; authors omitted
Application of conceptual frameworks, standards, and principles within a bibliographic system	Analyzes and classifies resources	Uneven adherence to best practices for subject analysis and classification assignments	Records lacked LCSHs; inconsistent use of metadata templates and element fields
Application of conceptual frameworks, standards, and principles within a bibliographic system	Encodes machine-actionable data	Inability to encode data	No serialization standards (XML, Turtle) used
Application of conceptual frameworks, standards, and principles within a bibliographic system	Asserts relationships between creators, works, etc.	Absence of publication information; lack of controlled vocabularies; lack of authorized names and subject headings	Entries for Toby Buonagurio appeared as “BUONAGURIO” and “Buonagurio”; lack of linkage; unsupported faceted searching
Application of universal standards within a local context	Assesses or seeks to understand local user needs for library metadata	Lack of accurate and consistent terminology for gallery names; minimal authority control for	No consultation with art galleries staff or University Archivist for local contexts

		university-created publications	
Application of universal standards within a local context	Sets (or advises on) local metadata practice, including selecting appropriate standards for local use	Working group disbanded; failed to develop digital project planning documents and local metadata practices	No consensus or guiding document for selecting and establishing local metadata practices
Application of universal standards within a local context	Documents local decisions and practices	Historical and current digital projects lack planning documentation	Projects lack coherence and consistency; unable to search across collections
Application of universal standards within a local context	Designs and modifies cataloging and metadata workflow processes	Policies and procedures yet to be developed	No formal workflows, processes, or guiding document for local metadata practices
Integration, mapping, and transformation of metadata within a bibliographic system	Converts or crosswalks a record/document from one metadata standard to another	Inconsistent adherence to metadata standards; inability to automate crosswalks of descriptive elements	Records include conflation of RDA, AACR2, MARC; lack of standardization hinders access
Integration, mapping, and transformation of metadata within a bibliographic system	Employs standards to normalize metadata	Metadata normalization done manually as prompted; no crosswalks developed	Dates not formatted as per the standard ISO 8601 expressed as YYYY-MM-DD; unsupported faceted searching
Integration, mapping, and transformation of metadata within a bibliographic system	Documents input and mapping decisions	Digitization projects lack planning documentation; ad hoc decision making	Provenance issues; inability to search across collections; metadata schemes are not interoperable

IDENTIFYING TRAINING GAPS AND OPPORTUNITIES

Information retrieval processes require well-formed metadata within a functional system that generates reliable results and supports faceted searching. Of the three types of metadata, descriptive metadata adds pathways for discovering library collections, while administrative and structural metadata establishes context, maintains provenance, and embeds preservation information. Together, these data document custodial history and aid life cycle management. Each of these activities is dependent on the staff's effectiveness and ability to create, develop, and maintain repositories and the assets they hold. In today's evolving technical services departments, a lack of technology skills does not need to be an obstacle; rather, this can be a development opportunity for designing a systematic training program based on continuing staff development in technical services (Davis 2016). One component of this could be the addition of training in team participation skills, such as goal-setting and measuring goal accomplishment (Zhu 2011). This would also aid in managing team expectations when embarking on the inevitable next migration or refreshing project. Targeted training in programming, systems, and digital asset management can substantially increase staff members' comfort with digital repository work. Professional development in the form of training, education, and mentoring is now expected when it comes to creating and preserving digital collections. According to the American Library Association (2012), "the transformation of libraries in the services offered and the perspective of their patrons, can only continue to progress if the staff of those libraries are encouraged to continue learning and working together." Moulaison-Sandy and Dykas (2016) suggest that librarians would be more likely to select and create documentation that adheres to the standards and best practices used by the institution, if relevant continuing education opportunities were more readily available to them.

At SBUL, ambiguities and confluences of staff roles and responsibilities, along with vacancies, originally prompted two librarians to initiate the pilot project. The project provided a forum for dialogues on planning, workflows, objectives, and outcomes. It also exposed gaps in organization-wide project management skills, since strategies and the resources needed to complete tasks were undocumented. More generally, creating a shared strategic plan for repositories can establish mutual understandings of long-term priorities and goals and will mitigate future migration problems, since “systems migrations are an inevitable necessity over time when needs and technology change” (Neatrou et al. 2017, 194). Such a plan also works to establish stakeholder expectations for future migrations.

In the pilot project, increasing the staff’s awareness of accepted standards and best practice sources proved to be an essential element in remediating the metadata. Based on the evaluative findings of previous assessments, the data remediation and normalization needed to be done manually, since automated processing was unavailable. This work was performed by staff across departmental lines. More generally, metadata workflows can be improved with staff training focused on developing automated scripts for global edits, using controlled vocabularies, and adhering to DCMI Metadata Terms. Creating a custom tool similar to one developed by the University of Utah which performed metadata cleanup during the migration process (Neatrou et al. 2017) would support efficiency.

Learning and knowledge gaps were assessed against the “Core Competencies for Cataloging.” In the future, a survey and manifest will record the self-perceived skill sets possessed by staff. The addition of a phase 7 will further identify gaps and help us to craft a plan of action in conjunction with the criteria of TRAC. We anticipate that future training areas will cover the application of universal standards at the local level and in the integration, mapping, and

transformation of metadata within a bibliographic system. Until we establish a formal program, however, several free sources for continuing professional development are available to cataloging and metadata staff to improve and support the underlying needs of digital project initiatives and professional practice gaps: the Library of Congress's "Catalogers Learning Workshop" (Library of Congress 2021); the OLAC Catalogers Network's "Publications and Training" materials (OLAC Catalogers Network n.d.); and the ALA's "Cataloging Tools and Resources" guide (American Library Association 2019). Moreover, the Digital Preservation Outreach and Education Network maintains an up-to-date list of trainings and provides consultations to develop individualized training plans (Digital Preservation Outreach and Education Network, n.d.).

CONCLUSION

Migration projects can afford libraries opportunities to assess their benchmarks in digital asset management. Quality metadata is invaluable in a migration; it provides access to and control of digital files, bitstreams, and file formats. In libraries, technical services work has too often been dismissed as not intellectual or necessary to fulfill scholars' needs, in comparison to front-line public services (Laskowski and Maddox Abbott 2014). This narrative needs to be changed. Developing a culture of continuous learning with unequivocal support for professional development embedded within it can significantly further a library's aspirations to be a trusted digital repository. The life cycle management of digital files necessitates employing a staff with diverse skill sets. To build infrastructure and foster collegiality, organizational-wide training should incorporate the larger aims of digital initiatives and underscore the importance of individual contributions in meeting objectives. Defining roles, and the qualifications needed to implement and execute projects, institutes individual accountability and coherence among

workflows. By framing training as an investment in staff and their career growth, gaps in knowledge can be closed. Consequently, a library's impact can be amplified, and its staff can be empowered to meaningfully contribute to its advancement.

REFERENCES

American Library Association. 2009. "ALA's Core Competences of Librarianship."

www.ala.org/educationcareers/sites/ala.org.educationcareers/files/content/careers/corecomp/corecompetences/finalcorecompstat09.pdf.

———. 2012. "Staff Development." www.ala.org/tools/atoz/staff-development.

———. 2019. "Cataloging Tools and Resources: Home."

<https://libguides.ala.org/catalogingtools/>.

Boylan, M. 2001. "Retrieval of Exhibition Catalogs: New Strategies at Virginia Commonwealth University." *Art Documentation: Journal of the Art Libraries Society of North America* 20, no. 2: 46–49.

Campbell, C. 1998. "Keeping It All Together: National Gallery of Canada Exhibition Records and Other Exhibition-Related Material." *Art Documentation: Journal of the Art Libraries Society of North America* 17, no. 2: 46–50.

Cataloging Competencies Task Force. 2017. "Core Competencies for Cataloging and Metadata Professional Librarians." Association for Library Collections & Technical Services. <https://alair.ala.org/handle/11213/7853>.

Center for Research Libraries and OCLC. 2007. "Trustworthy Repositories Audit & Certification (TRAC) Criteria and Checklist." Center for Research Libraries. www.crl.edu/sites/default/files/attachments/pages/trac_0.pdf.

- Collaborative Digitization Program, CDP Metadata Working Group. 2006. “Dublin Core Metadata Best Practices Version 2.1.1.”
<https://sustainableheritagenetwork.org/digital-heritage/cdp-dublin-core-metadata-best-practices-version-21>.
- Davis, J. Y. 2016. “Transforming Technical Services: Evolving Functions in Large Research University Libraries.” *Library Resources & Technical Services* 60, no. 1: 52–65. doi: <https://doi.org/10.5860/lrts.60n1.52>.
- Digital Preservation Coalition. n.d. “DPC Rapid Assessment Model.”
www.dpconline.org/digipres/dpc-ram.
- Digital Preservation Outreach and Education Network. n.d. “Digital Preservation Outreach and Education Network.” www.dpoe.network.
- Dublin Core Metadata Initiative. 2020. “DCMI Metadata Terms.”
www.dublincore.org/specifications/dublin-core/dcmi-terms.
- Laskowski, Mary S., and Jennifer A. Maddox Abbott. 2014. “The Evolution of Technical Services: Learning from the Past and Embracing the Future.” *Technical Services Quarterly* 31, no. 1: 13–30. doi: 10.1080/07317131.2014.844619.
- Library of Congress. 2005. “Library of Congress Digital Repository Development Core Metadata Elements.” www.loc.gov/standards/metadata.html.
———. 2021. “Catalogers Learning Workshop.” www.loc.gov/catworkshop/.
- Mering, Margaret. 2019. “Transforming the Quality of Metadata in Institutional Repositories.” *The Serials Librarian* 76, no. 1-4: 79–82. doi: 10.1080/0361526X.2019.1540270.

- Moulaison-Sandy, Heather, and Felicity Dykas. 2016. "High-Quality Metadata and Repository Staffing: Perceptions of United States-Based OpenDOAR Participants." *Cataloging & Classification Quarterly* 54, no. 2: 101–16. doi: 10.1080/01639374.2015.1116480.
- Neatrou, Anna, Jeremy Myntti, Matt Brunsvik, Harish Maringanti, Brian McBride, and Alan Witkowski. 2017. "A Clean Sweep: The Tools and Processes of a Successful Metadata Migration." *Journal of Web Librarianship* 11, no. 3-4: 194–208. doi: 10.1080/19322909.2017.1360167.
- OLAC Catalogers Network. n.d. "Publications and Training Materials." www.olacinc.org/training-publications.
- Reijerkerk, Dana. 2020. "Digital Asset Inventory: Report on Digital Preservation Issues at Stony Brook University Libraries." Stony Brook University Libraries, State University of New York at Stony Brook.
- . 2021. "Digital Asset Assessment: Second Annual Report on Digital Preservation Issues at Stony Brook University Libraries." Stony Brook University Libraries, State University of New York at Stony Brook.
- Rinaldo, K. 2007. "Evaluating the Future: Special Collections in Art Libraries." *Art Documentation: Journal of the Art Libraries Society of North America* 26, no. 2: 38–47.
- Salomon, K. 2014. "Facilitating Art-Historical Research in the Digital Age: The Getty Research Portal." *Getty Research Journal* 6: 137–41. doi: 10.1086/675796.
- Society of American Archivists. 2005–2021. "Dictionary of Archives Terminology." <https://dictionary.archivists.org>.
- Zhu, Lihong. 2011. "Use of Teams in Technical Services in Academic Libraries," *Library Collections, Acquisitions, & Technical Services* 35, no. 2-3. doi: 10.1016/j.lcats.2011.03.