



Data Competencies for Librarians



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What are the data-related competencies that non-data librarians need?



Context

- Shift toward “collaborative, data-intensive, and computational” scholarship.
- Many librarians lack formal training in these emerging areas.
- Librarians are seeking to upskill in data-focused areas.



**This research seeks to
identify and map
data-related
competencies over a ten
year period.**



Scoping review of the literature



- Identify and track developments within literature following Tenopir's 2012 white paper
- Investigate trends across the years and categories
- Flexibility to include a variety of study designs





02

Methodology



Terms

Included data-, librarian- and competency-related term categories



Data Sources

6 databases, 1 thesis/dissertation source, Google Scholar, hand searching



Eligibility

Refined and applied eligibility criteria (tool: Rayyan)



Coding

By competency, classified into category and identified liaison- or data-specific competency



Coding (Data-specific)

Data literacy	Data Management	Data Curation	Tools, Tech & Software
Find Data Access Data Cite Data Use Data Ethically Data Acquisition or Deaccession Research Data Lifecycle Author & Document Identifiers Bibliometrics Promote Open Science	Data Project Planning DMP Creation Data Documentation Funder Mandate Familiarity Copyright & License Confidentiality Repository Selection	Repository Use Determine Data Quality Data Security Data Preservation Data Storage Metadata Prepare Data for Sharing Data Governance IR Creation & Management Support Multiple Data Types	Data Cleaning Data Visualization Programming Data Analysis Statistical Analysis Tech Infrastructure IT Competency



Librarian-specific competencies were well-represented...



Informational / Consulting

Includes; Reference & Consulting, Communication, Training, Collaboration / Library Engagement, Disciplinary Background



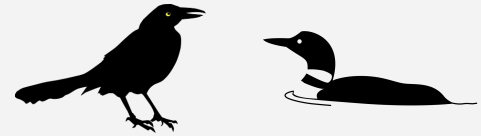


Top Ten Data Competencies

- 1. Metadata**
- 2. Prepare Data/Data Sharing**
- 3. DMP Creation**
- 4. Data Preservation**
- 5. Programming/Data Analysis**
- 6. Support Multiple Data Types**
- 7. Tech Infrastructure/IT Competency**
- 8. Repository use**
- 9. Data Governance**
- 10. Cite Data**

Not everybody has to do everything....

(It doesn't have to be daunting!)



Example

Is there a single category that it makes sense to focus on based on your position roles?

Is there one (or several) competency area that it makes sense to start with such as, Metadata or Programming/Data Analysis?

Competency	Category
Metadata	Data Curation
Prepare Data for Use in Repository/Data Sharing	Data Curation
Data Preservation	Data Curation
DMP Creation	Data Management
Programming/Data Analysis	Tools/Tech/Software
Tech Infrastructure/IT Competency	Tools/Tech/Software
Support Multiple Data Types	Data Curation
Data Governance	Data Curation
Repository Use	Data Curation
Data Publication	Data Literacy
Cite Data	Data Literacy

Training Resources

We've compiled a list of training resources, both free and cost-based

<https://bit.ly/4dJoMfG>

	Name	URL	Competency	Competency Category	Free or Fee	Description of Resource	About the Organization
1	"Understanding Metadata"	https://www.niso.org/publications/understanding-metadata-2017	Cite Data; DMP Creation; Metadata	Data Curation	Free	Book: NISO Primer (2017)	NISO (National Information Standards Organization) maintains, and publishes technical standards for managing information, particularly in publishing, libraries, and IT.
2							
3	DCN (Data Curation Network)	https://datacuration.network/outputs/data-curation-primers/	Cite Data; Programming/Data Analysis	Data Curation	Free	Metadata primers for: Archeology, Clinical Trials, Python, Sensitive Biodiversity Data - includes Data Sharing & Use Agreements & Permits to Conduct Research, Metadata and Documentation	Data Curation Network's mission is to empower researchers to publish high quality data in an ethical and FAIR way, and to advance the art & science of data curation by creating, adopting, and openly sharing best practices, and supporting data curation training and professional development opportunities.
4	MANTRA Research Data Management Training	https://mantra.ed.ac.uk/	Data Governance	Data Curation; Data Management	Free	Courses: Research Data in Context, Data Management Planning, Organising Data, Preparing your Data for Archiving, Keeping Research Data Safe, Protecting Sensitive Data, FAIR Sharing and Access and Data Handling.	MANTRA is a free, open-access, non-assessed, interactive online course designed by the University of Edinburgh for postgraduate students, early career researchers, and librarians.
5	ICPSR	https://www.icpsr.umich.edu/sites/icpsr/teaching-learning/build-your-data-skills	Data Governance	Data Literacy; Data Curation; Tools/Tech/Software	Free	Build your Data Skills Guides in How to Find a Dataset, Choosing Data to Meet Your Needs Worksheet, Choosing the Right Statistical Test, Interpreting SPSS Statistical Results, Computer-Aided Text Analysis Basics, How to Cite Data Correctly, Preparing and Archiving Your Data (Guide for Social Science Data).	ICPSR is an international consortium of 800+ academic and research bodies. They provide training in data access, curation, and analytical methods for social science. There is a Summer program that is fee-based that covers Statistics, Data Analysis, and Quantitative and

Thanks!

Do you have any questions? Feel free to reach out.

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