



How Librarians can respond to Researchers' and Students' Data Literacy Training Needs

By

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Outline



CONTEXTUAL
SETTING



DATA LITERACY
DEFINED



RESEARCHER
TRAINING NEEDS



LIBRARIAN'S
RESPONSE TO THE
NEEDS



SKILLS REQUIRED BY
THE LIBRARIAN



TAKEAWAYS



CONCLUSION



Contextual setting

Rising need for Data Management

26 public universities (Research Support Function)

Data Management Plan (NRF Requirement)

NRF. 2015. [Statement on Open Access to Research Publications from the National Research Foundation \(NRF\)-Funded Research](#)

South African Data Management Plan (DIRISA)

Academic Libraries and RDM role

Open Science (Data Sharing)



Data Literacy defined

- There are various types of literacies including:
 - ✓ Information literacy;
 - ✓ Digital literacy;
 - ✓ Academic literacy;
 - ✓ Data literacy (DL), which comprises competencies required by researchers at all levels to work with data.
- ❖ DL is the recognition for the need for data, creation or search for data, critical assessment of data, and their sources, management, archiving, sharing, use of data, as well as ethical and legal aspects

(Koltay, 2017; Onyancha, 2018;...)



Objectives of the study



To determine the attendance of formal DL training by researchers;



To establish the aspects of DL training received by the researchers;



To verify the views of the researchers regarding the necessity of DL training;



To ascertain the DL training requirements of the researchers.

Literature review

- Schneider (2013); Palsdottir (2021); Dogan, G., Taskin, Z. and Aydinoglu (2021)
 - What prompts the need for data literacy?
 - Governments, funders and publishers' requirements for sharing data;
 - Capacity to store massive amounts of data in a data intensive environment.
- Patterson, *et al* 2018; Chawinga and Zinn, 2019; Koltay, 2017
 - Literature from across disciplines and countries identified skills gap
 - Librarians regard RDS as a new jurisdiction area, the same with RDM.





Literature review (continues)

- Patterson, *et al* 2018; Chawinga and Zinn, 2019; Koltay, 2017
 - Literature from across disciplines and countries identified skills gap
- Koltay (2017); Palsdottir (2021)
 - DL skills are critical for all; researchers, students, and librarians
- Vilar, P. and Zabukovec (2019); Tibor (2021)
 - Various aspects of data literacy (metadata, DMPs, data citation, file naming, etc) are identified in literature as need areas and emphasis is informed by discipline.



Methodology

Quantitative Approach

Survey

Online questionnaire

Population

26 public universities (Researchers)

Response

141 responses were received
140 deemed usable

Ethics

Ethical Clearance received: NWU
Gatekeeper's approval: other universities

Findings on attendance of formal DL training

Data Training Snapshot: Key Findings

Formal Data Training: 59% already trained!

Data Management Plans (DMPs): Only 7% trained; 93% missing out!

Metadata Training: Rare at just 2%.

Version Control: A mere 3% trained.

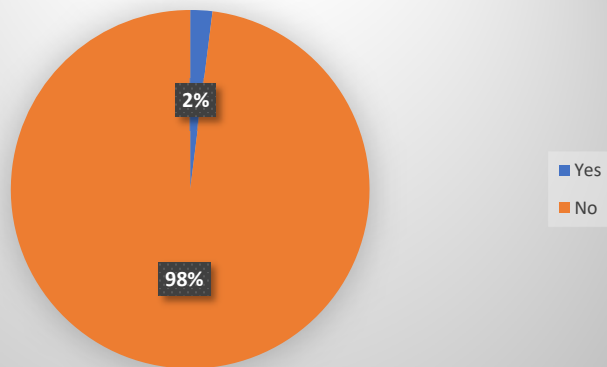
File Naming Best Practices: 5% have it covered.

Data Citation Skills: Only 18% trained.

Key Takeaway: Major training gaps in core data management skills!

Findings on necessity to have formal data literacy training

Formal training necessity



Necessity to have formal data literacy training

Formal Data Literacy Training:

- Only **2%** of researchers see value in formal training.
- A surprising **98%** believe it's **unnecessary**.

Training Willingness:

- **Low interest** overall in attending structured data literacy sessions.

Insight: Researchers may prefer **self-led** or **integrated** data skills over formal courses. Lack of incentives may also contribute to low interest.

Findings on data literacy training requirements



Training Needs Summary

Data Management Plans (DMPs): 58.6% need training

Metadata: 48.6% need training

File Naming Consistency: 40.7% need training

Data Citation Styles: 37.9% need training

Insights: The majority seek training on DMPs and metadata, highlighting key focus areas.



Summary



The results of the study exposed deficits in DL training levels of SA researchers;



There was a general lack of training in areas such as DMPs, version control of data sets, consistency in file naming, and data citation styles;



There was an apparent desire by some researchers to outsource some of the key data management functions;



Results further point to DMPs and metadata training as priority areas for researchers in SA.

How must librarians respond to the needs



ADVOCACY WORK – LIBRARY SHOULD ACT AS HUBS FOR CITIZEN SCIENCE



AWARENESS CREATION – FEW RESEARCHERS MIGHT BE AWARE OF THE DATA SERVICES



COLLABORATION WITH RELEVANT KEY STAKEHOLDERS - NOT AN OPTION BUT A MUST



INTENSIFY DL SKILLS TRAINING; PROVIDE EXPERTISE IN DEVELOPING DMPS, PROVIDE DATA LITERACY EDUCATION.



TAKE ADVANTAGE OF THE UNIQUE POSITION OF CROSS-DISCIPLINARY POLLINATORS;



CREATE AND DEVELOP LIBGUIDES, TRAINING VIDEOS, AND HOSTING OF WEBINARS; FACILITATE ACCESS TO DATA.



USE THE ALREADY ESTABLISHED IL PROGRAMMES AND EMBED DL ASPECTS;

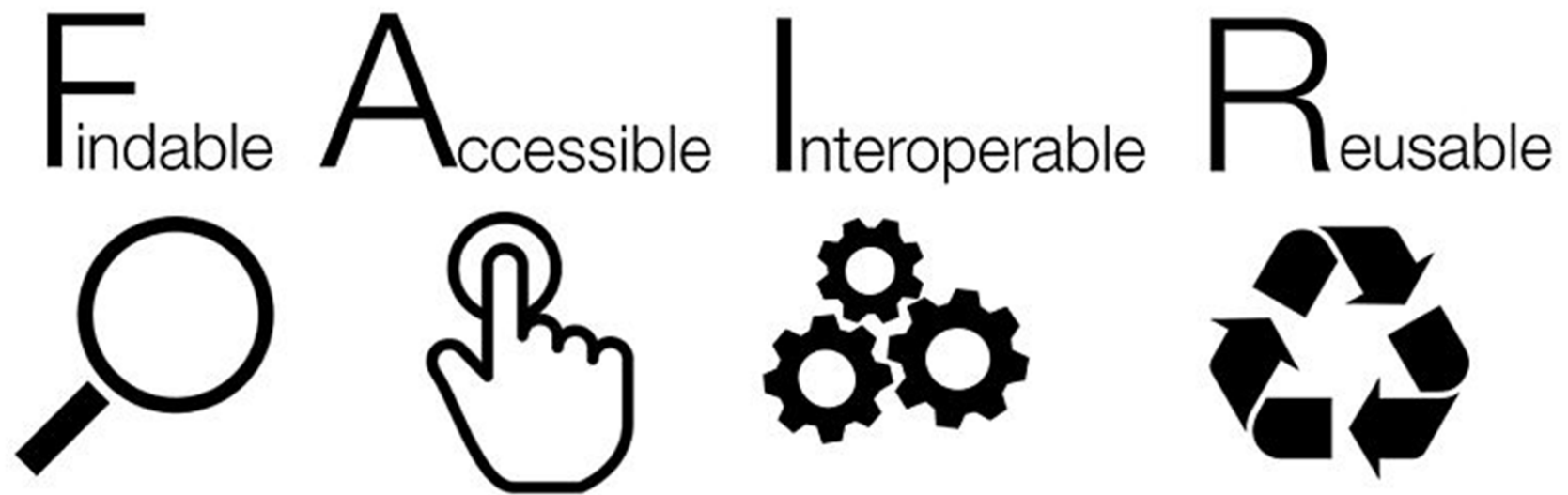


Librarians in the Research Data Lifecycle



- Librarians should participate in the phase of research (planning) that precedes publishing.
<https://utas.libguides.com/ResearchData/lifecycle#s-lg-box-21884856> 27/10/2024

Making Data FAIR



- Librarians should assist with assessment of the impact of research data
- For data to be usable, it must be discoverable and accessible and be in a usable file format (Koltay 2017)

Conclusion

Adapting to researcher preferences:

An opportunity for librarians to reinvent formalized DL to engage and reach out to researchers. (provide accessible, researcher-centered learning experiences that align with their preferences and real-world applications)

Strategic awareness and engagement:

New pathways for librarians to enhance engagement. Focusing on researchers' areas of interest ensures a ripple effect in DL awareness and skills acquisition.

Building a collaborative future:

Instead of seeing the rejection of formal digital literacy training as a barrier, librarians can view it as an opportunity to innovate and collaborate with researchers, fostering, continuous learning, making DL integral to research excellence.

Data literacy should motivate researchers to openness, i.e sharing data with others (Koltay, 2017).



References / Bibliography

- Dogan, G., Taskin, Z. and Aydinoglu, A.U., 2021. Research data management in Turkey: A survey to build an effective national data repository. *IFLA journal*, 47(1), pp.51-64.
- Koltay, T., 2017. Data literacy for researchers and data librarians. *Journal of Librarianship and Information Science*, 49(1), pp.3-14.
- Palsdottir, A., 2021. Data literacy and management of research data—a prerequisite for the sharing of research data. *Aslib Journal of Information Management*, 73(2), pp.322-341.
- Schneider, R., 2013. Research data literacy. In *Worldwide Commonalities and Challenges in Information Literacy Research and Practice: European Conference on Information Literacy, ECIL 2013 Istanbul, Turkey, October 22-25, 2013 Revised Selected Papers 1* (pp. 134-140). Springer International Publishing.
- Tibor, K., 2021. *Research data management and data literacies*. Chandos Publishing.
- Vilar, P. and Zabukovec, V., 2019. Research data management and research data literacy in Slovenian science. *Journal of Documentation*, 75(1), pp.24-43.





Thank You

I can take questions if any!

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