NOVA MEDICAL SCHOOL
Biblioteca | Library

LOVE DATA WEEK

10-14 fevereiro 2025

RESEARCH DATA LITERACY

WHAT IS DATA LITERACY

Research data literacy in research refers to the ability to **access**, **understand**, and **interpret** data adequately enough to **communicate** its meaning.

WHY IS IT IMPORTANT?

Research data literacy is an important skill for researchers, librarians, and other information professionals. It is crucial in today's data-driven world for several reasons:

- Maximizes **efficiency** in the processes of **decision-making**;
- Helps **anticipate trends** as well as **mitigate risks**;
- Gives a **competitive edge** by providing the knowledge and skills to use data strategically;
- It is an important tool to break down information and help **educate** the wide public.

COMPETENCES & SKILLS

TECHNICAL SKILLS

- ***Extraction and preparation*** (extract, clean, standardize and organise data)
- ***Analytics*** (turning data into insights)
- ***Visualisation*** (creating visual representations to effectively present data)
- ***Management*** (locate, access, organize and store data)
- ***Data modeling*** (applying advanced statistical and analytic techniques)

NON-TECHNICAL SKILLS

- ***Critical thinking*** (question assumptions and identify biases)
- ***Research*** (gather, collect, and assess the validity of data)
- ***Communication*** (effectively present findings)
- ***Domain knowledge*** (keeping up with the industry and latest trends)
- ***Ethical considerations*** (awareness of the implications and impact of collection and use

CATEGORIES OF DATA

Based on...

FORM	SOURCE	STABILITY	SENSITIVITY
Numeric; Text; Audiovisual; Models, code; Discipline-specific (FITS, CIF, FCS, BIDS).	Observational; Experimental; Simulation Data; Derived or Compiled.	Fixed datasets; Growing datasets; Revisable datasets.	Public; Private; Confidential; Data regulated by legislation.

CHALLENGES

Challenges in implementing research data literacy include:

- User resistance to new technology;
- Skills gaps within teams;
- Data silos in specific departments;
- Need for robust data governance practices;
- Low reproducibility.

Low reproducibility in biomedical research is a significant issue, with major implications for scientific progress and the reliability of findings.

*To enhance data interoperability and promote transparency follow the **FAIR principles**!*

Sources:

- ECIL
- Gonzalez Soltero et al. *FAIR data management: a framework for fostering data literacy in biomedical sciences education.* (2024).
- Martin, E. R., (2014) "What is Data Literacy?", *Journal of eScience Librarianship* 3(1): 6
- NLM Data Glossary
- Tableau