Learning Journal

Reflective questions and learning activities are embedded into each module to guide and further develop your own data management practices. These activities are intended to be applied to a current project, or they can be based on a provided scenario if you do not have a current project.

Athabasca University

Module 1: Introduction to Research Data Management

1. **How might data management planning be relevant to your own program or project?**

   - Consider which practices for handling data you already know or wish to use, and
   - Start to think about questions you may need to ask or processes you may need to put in place as you work through these modules.

2. **What implications might the sets of principles introduced in this module have for your own work? Consider what data you expect to have, and what can and should be done with it beyond the life of your project?**

3. **Seek out and review relevant documentation from your home institution. Does it apply to your project or area of research? Suggested places to check include:**

   - Your research ethics board's website
   - University policy or governance websites (check open access and research publication policies)
   - Program manuals from your department or faculty of graduate studies

   Consider:

   - Are there any established practices within your discipline or department?
   - How do these practices and policies relate to how you plan to handle your data?

4. **You have completed a project and are considering different options for publication.**

   Select three different journals from your field and investigate whether they have data deposit or data sharing policies. Alternatively, investigate the examples given below.

   Publishers often put their requirements and recommendations in their author guidelines or in their editing and publishing policies. Examples include the data policies of the following journals:

   - *Autism* (a SAGE journal): https://journals.sagepub.com/home/aut
   - *Journal of Open Archaeology Data:* https://openarchaeologydata.metajnl.com/
   - *Bioinformatics:* https://academic.oup.com/bioinformatics

   Consider:

   - Where did you find their policies?
   - How do the policies differ?
   - How do the policies demonstrate commitment to good research data management?
   - If you were targeting one of these journals for publication, how might it affect your planning and practice?

5. **This module covered:**

- An introduction to research data management and the research data lifecycle.
    - Data management plans as a tool for organizing and preparing for data handling throughout a project and beyond its completion.
- Principles for research data management.
- Guidance on navigating policies and requirements from institutions, funders, and publishers.

What are your takeaways? How can you apply these concepts to your own discipline or to your own research projects?

Module 2: Ethics and Responsibilities

1. **Review the Sensitive Data Expert Group's Language for Informed Consent (https://doi.org/10.5281/zenodo.4107178).**

   If you plan to collect human participant data, what statements will you use? Be sure to consider any potential data sharing and use.

   If you don't have a project in mind, or if you won't be using human participant data for which you need to collect consent, consider the following scenario. You are a social science researcher doing interviews with 10–15 participants regarding their experiences of online education. You would like to share the de-identified transcripts in a data repository for use in similar research. What language would you use on your consent form to allow this sharing?

2. **This module covered:**

   - An introduction to sensitive data and key terms and concepts related to its handling.
   - Considerations for documenting roles and responsibilities in your data management plan.

   What are your takeaways?

   - Do you work with human participant data? If so, how might you apply the concepts for sensitive data handling in your own discipline or on your own research projects?
   - If you don't work with human participant data, are there other reasons your data may be considered sensitive?
   - If you don't work with human participant data, are there other reasons your data may be considered sensitive?

Module 3: Data Documentation

1. **Using the practices outlined in this section, reflect on your own research project.**

   Download and complete the provided worksheet to create an organization and naming conventions for your research project files. If you do not have a research project in mind, select a portion of the files on your computer to work through the exercise.

   - Word & PDF worksheet: https://auspace.athabascau.ca/handle/2149/3684

2. **Based on the file naming activity you completed earlier in this module, create a top-level readme file to use for your chosen project or set of files.**

   Consider the information that is necessary to understand your system, including how it is organized, how files are named (include explanations of any abbreviations used), and information on storage locations and backups. You can use the template provided (https://auspace.athabascau.ca/handle/2149/3685) or create your own plain text file.

3. **This module covered: An introduction to data documentation including tips to apply in practice and examples of documentation types.**

   Good data documentation is pivotal to data preservation and deposit, which is discussed further in Module 5. Practices discussed in this module make data more accessible and shareable.

   What are your takeaways?

   - Which types of documentation are familiar to you? How are they useful?
   - Which practices are common in your discipline?
   - Which documentation will be useful for your own project?
     - Will you use it to communicate with your supervisor or other team members?
     - Did the worksheets help you to design a plan and naming conventions?

Module 4: Data Documentation

1. **With your own research project in mind respond to the following prompts:**

   - Investigate your local institution's IT and research computing offerings. What is available to you and is it suitable for your project?
   - Investigate your institution's research and IT policies. Does your institution have a classification for sensitive data?
     - If you have human participant data, you could also review guidance provided by your research office or research ethics board.
   - Consider physical, administrative, and technical safeguards. What are some safeguards you could use to protect your data?

   If you do not have a research project in mind, download either:

   - *Data Management Plan for Computational reproducibility in High-Performance Computing (HPC)* exemplar (Zhiang, 2020) (https://doi.org/10.5281/zenodo.4062486)
   - *Data Management Plan for People, Places, Policies and Prospects: Affordable Rental Housing for Those in Greatest Need* exemplar (Leviten-Reid, 2020) (https://doi.org/10.5281/zenodo.4062466)

   Examine the type of data the author is collecting and their plans for data storage and backup, then assume you want to conduct a similar study and respond to the following prompts:

   - Investigate your local institution's IT and research computing offerings. What is available to you and is it suitable for your project?
   - Investigate your institution's research and IT policies. Does your institution have a classification for sensitive data?
     - If you have human participant data, you could also review guidance provided by your research office or research ethics board.
   - Consider physical, administrative, and technical safeguards. What are some safeguards that the exemplar author used to protect their data? Would you implement similar safeguards?

Module 5: Data Deposit

1. **Investigate repository options for data deposit. Can you find an option that would be a good fit?**

   - Re3data.org is a registry of repositories you can use as a tool to find repositories.
   - Are there repositories commonly used in your discipline?
     - Check articles you have read, do they have data availability statements or links to datasets?
   - Does your institution have its own data repository? Many institutions in Canada use Borealis (https://borealisdata.ca/) to host their repository.
     - Check and see if they your institution has recommendations or requirements before you deposit data. Some institutions may review your data before accepting it for deposit or require you to meet with them to get set up to use their system.

   With your own project in mind, select a repository, and investigate its procedures for deposit. What might you need to keep in mind to make it easier for you to deposit your data at the end of your project?

   If you don't have a project in mind, check out the FRDR (https://www.frdr-dfdr.ca/repo/?locale=en) or your local institution's data repository. How would you plan and prepare your data for deposit if you were doing a survey? You may need to refer back to Module 3 for ideas on how to document the data.

2. **This module covered: What data deposit is, as well as why and how you should deposit your data, including:**

   - Licensing and open data.
   - An overview of repository types.
   - Preparing data for deposit.

   Describing your data well and depositing it with a data repository are ways to make your data more findable, accessible, interoperable, and reusable (FAIR).

What are your takeaways?

- Are you aware of any repositories used by colleagues in your discipline?
- How might you document your data during your project to make it easier to deposit when you are ready to publish?
- Would you consider making your data open? Why might that not be appropriate?