

Evaluating the DMP Tool

Research can be expensive, and funding sources are often competitive. Making sure every jot and tittle is accounted for and placed correctly when requesting financial resources requires a great deal of time and effort, and new layers of required information often crop up. For example, major federal funding programs, such as the National Institutes of Health (NIH) and National Science Foundation (NSF), have added requirements that data management plans (DMPs) be incorporated into requests for funding. However, these federal agencies tend to offer general rather than specific guidelines for data management, such as requirements for a DMP without “more focused language, such as how to budget for data management or requirements to conform to standard data and metadata formats” (Dietrich et al., 2012).

This adds up to a need for researchers to be aware of a range of subjects related to data management quite separate from their own areas of expertise, including appropriate standards for data, metadata, preservation, access, and data repositories (Dietrich et al., 2012). The requirements for a DMP as part of a larger funding request acknowledges the importance of preserving and sharing research data. A DMP exists “to describe the data resulting from a project, and how they will be made publicly accessible for reuse” (Parham et al., 2016, p. 54). However, studies suggests that researchers may not fully understand exactly what funding agencies are asking for, such as “what the concepts *reuse* and *redistribution* mean, and how to address them in a DMP through a stated policy or guideline” (p. 62); what exactly metadata is and “its role in making their data discoverable and useable by external audiences” (p. 60); and what options exist for repositories or why they are necessary (p. 63). While increased (and ongoing) training in data management principles would certainly help, the fact remains that even information professionals can have questions about the best ways to create a data management plan and might seek out tools to help make the job easier. One such resource is the DMP Tool, an open-source application specifically created to help researchers draft DMPs (About, n.d.). DMP Tool is a useful, if not perfect, application that can help take some of the stress out of creating this particular part of a grant proposal.

Assessment of the DMP Tool

Overall, the DMP Tool is a useful web resource for researchers who need to create a data management plan. It presents a simple, clean, graphic interface laid out to make the process

relatively painless. The major components and functions for creating a DMP are laid out in six simple tabs across the top: Project Details, Collaborators, Write Plan, Research Outputs, Finalize, and Download. Keeping these segments isolated helps to keep from overwhelming the plan creator and nicely breaks the job down into manageable chunks. DMP Tool makes use of point-and-click options wherever possible to minimize writing tasks, such as drop-down menus to select from lists for subjects like research domain, funding status, and types of research outputs. Check boxes are also used, such as whether data may contain “sensitive data” and “personally identifiable information.” Other options include searchable databases to help streamline requirements, such as what repositories the writer plans to use for storing and sharing the data gathered and what metadata standards will be used. By way of acknowledgement that no database can be exhaustive, the tool also includes an option to write in repositories or standards that are not listed.

Some elements of a DMP plan require substantial input from the user, particularly the “Write Plan” tab. The tool breaks this section down into segments much like the overall plan with plain, clear instructions. For example, under “Roles and responsibilities,” the page offers instructions: “Specify the roles and responsibilities of all parties with respect to the DMP activities.” In addition, the tool offers guidance on what kinds of information to include via a context menu to the right, which is itself divided into tabs for guidelines from different sources. Under the “Roles and responsibilities” section, one tab offers suggestions from the DMP Tool creators, such as, “Outline the roles and responsibilities for all activities, e.g., data capture, metadata production, data quality, storage and backup, data archiving, and data sharing. Individuals should be named where possible.” Another tab offers links to pages at the NSF for more specific guidance.

Many details that require written input include tooltips that appear when the user mouses over a text box. For example, the editor for the plan’s abstract advises: “Briefly summarize your research project to help others understand the purposes for which the data are being collected or created.” This can be found for even simple fields like the funding opportunity number (“A unique number that a federal agency assigns to a grant announcement”) and grant URL (“Provide a URL to the award's landing page if possible, if not please provide the award/grant number”). Another useful point is the fact that options presented are not just generic; they are based on the source of funding and subject area. For example, if a user creates a plan based on the National

Science Foundation's Education and Human Resources template, the tool tells them that the plan they are working on "is based on the 'NSF-EHR: Education and Human Resources' template provided by National Science Foundation (nsf.gov) - (ver: 3, pub: 2024-06-27)."

When it comes time to finalize the plan, DMP Tool offers a few automatic safety checks to help make sure it is not published prematurely. These include requirements that a certain level of detail is present under the "Write Plan" tab and that the plan is not flagged as a mock project on the details panel. Once the DMP is ready to go, the user may download a copy in a variety of formats as needed, including PDF, comma separated values, HTML, text, Word document, and JSON. Document formatting options include a project coversheet, section headings, the questions that drive answers, unanswered questions, and a table of research outputs. For PDF files, the user can select the font used and its size, as well as the margins. By keeping the formatting options to a minimum, the tool not only reduces the choices a potentially overwhelmed user has to make, but it also maintains a minimal look that is both professional and machine readable.

All that being said, there are some minor areas where DMP Tool does not exactly shine. One is a lack of examples for things like the abstract. The tooltips and guidance are helpful, but newcomers, particularly those creating a "mock" plan for education and/or practice purposes, would benefit from specific examples in addition to suggestions. The tooltips themselves are sometimes hit or miss. Most text boxes have one, but a few, such as a field asking for an ORCID for collaborators and another for the description of a research output, do not provide any information about what exactly the system is asking for. On the usability front, the use of tabs is helpful, but the shading is rather counterintuitive, particularly for the guidance menus on the Write Plan tab. The selected tab is white, while the nonselected tabs are dark blue. The dark color provides an emphasis that suggests that it is the one selected, which can be confusing to a newcomer who likely did not notice the same pattern on the top-level tabs at first.

Finally, there are some issues with basic writing mechanics that can be distracting. For example, one box on the first tab asks for a "Grant number/url," instead of capitalizing the acronym URL. The tooltip for that textbox says: "Provide a URL to the award's landing page if possible, if not please provide the award/grant number." The instructions misses one comma and creates a comma splice in another location. On the Collaborators tab, the tooltip for inviting collaborators says: "Enter the email address of your collaborator: If they are already using DMP

Tool, they will see this plan on their dashboard, and receive an email. If they are not currently using DMP Tool, they will receive an email inviting them to the tool so they can collaborate on your plan.” There are comma issues here, as well, and the colon would be better served as a period or semicolon. While these are admittedly a minor nitpicks, grammatical issues such as these do undermine the tool’s credibility somewhat, especially in light of the fact that DMP Tool was established by a number of institutions of learning and is currently maintained by the California Digital Library, which is part of the University of California (*About*, n.d.).

Conclusion

It is likely that funding requests will continue to increase requirements “that researchers make explicit their plans for managing research data, including provisioning for the storage, preservation, and access to high-quality, well-documented digital data” (Dietrich et al., 2012). In light of this, researchers could certainly benefit from “increased training on data management topics such as metadata and its applications, formats suited for sharing data, and documentation for data reuse, researchers clearly need guidance on data licensing options and intellectual property policies” (Parham et al., 2016, p. 64). Training aside, however, DMP Tool provides a beneficial resource to help streamline this particular part of the grant-writing process. It may have a few niggling issues that would help polish its overall presentation, but its functionality and usefulness cannot be denied.

References

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