

Exchanging Data Management Plans with DDI

Implementing Data Management in Social Science Funding The German Case

Uwe Jensen,
Sebastian Netscher, Kerrin Borschewski
GESIS - Leibniz Institute for the Social Sciences

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Outline

Part 1 DMP importance

- > German case
- > DMP in research projects

Part 2 Exchanging DMP with DDI

- > Challenges & findings
- > DDI ADMP working group
- > Outline of Use cases for different user groups

P1: Active Data Management Planning is gaining in importance

Objectives

1. Ensure quality & transparency of research
2. Support replication of research-data
3. Enable data sharing & re-use of data

e.g. Horizon 2020 - the Open Research Data Pilot

- Proposal stage: Policy on Data Management (DM) is evaluated under 'Impact'
- Project stage: DM-Plan (DMP) within first 6 Months; updates during project

e.g. ESRC Economic and Social Research Council

- For years manifold guidance on RDM for applicants
- Requirement of data sharing and archiving (UK Data Archive)

.... many others

DMP in German research funding & institutions – Two examples

German Research Foundation (DFG)

- 1998 Primary data ... are to be preserved for ten years [1] to ensure replication
- 2015 Guidelines on Handling of Research Data [2] > **Guidelines for applicants** [3]

DM criteria

- Re-use & quality assurance > data types, discipline standards & repositories, ensure access ...

Funding DM costs (all disciplines > more specifications for special funding lines):

- data preparation & use of existing infrastructure

BMBF - German Federal Ministry of Education and Research [4]

DM criteria (~ empirical data from research on education):

- Ensure long-term preservation, secondary analysis & re-use
- Submit created data in re-usable form to appropriate institution (e.g. GESIS Data Archive / RDC)

Funding DM costs

- Management of self-generated data, fees for secondary data, investments and other positions

DMP challenges & aims for research projects

Start DM-Planning while preparing a proposal with partners

- ❖ Discuss How + Why to do What, When, together with Whom > **Strategy ...**
- ❖ Specify data workflows, rules, responsibilities > **Data lifecycle ...**
- ❖ Set up clear guidelines for dealing with (own -and / or other) data > **How To ...**
- ❖ Review & update & adapt it frequently > **Project structure**

- ✓ **Prospective DM-Planning aims** (as integral part of the research process)
 - ✓ **Increase** quality & transparency of research <> data replication, sharing & re-use
 - ✓ **Set up** systematic documentation to achieve these aims

- **DM-Plan: documentation project DM strategies & measures**
 - To meet needs of **funders** > **journal, host institute, project leaders ...**
 - To implement **DM strategies & measures** among partners
- ❖ **Form & content of a DM-Plan vary** > requirements formalized as **'templates'**

P2: Challenges to implement DMP in DDI – Plan & Planning

1. DDI option to describe DMP (Ref. Arofan Gregory. 2013 [5])

Structure of DM-Plan

1. General project information
2. Data collection
3. Documentation and metadata
4. Storage, organization and security
5. Ethics, legal compliance & and IPR
6. Preservation and sharing
7. Responsibilities and resources

DDI-C > Study description >
Administrative items

e.g. Organization, funding, project
title, purpose ...

But many uncovered items...

DDI-L - > modules
study concept, data collection,
processing, dissemination, archiving

Similar to DDI-C

No specific DMP information set

Other DDI Options ?!

- ❖ Apply **XML schema extensions** to incorporate DMP metadata > may not be accessible by existing DDI tools
- ❖ **Reference DM-Plan** as external document > but no re-use of information

2. Challenges to integrate DMP information into DDI

- ❖ How can DDI **address the wide variety of DM-Plans?**
- ❖ How might **DM-Planning** fit into the **data lifecycle?**

[5] A. Gregory. 2013. Data Management Planning and the Data Documentation Initiative

DDI work group “Active Data Management Planning” – ADMP

Working group initiated 2015 to **respond to growing importance of DMP**

❖ Formation of group in progress > 7 defined goals > 1st. actions outlined

Goals

1. **Identify DDI elements** relevant to DM Plans;
2. **Develop use cases / user stories** about DDI elements > crosswalk to other standards
3. **Provide guidance to integrate ADMP** into DDI **specification development** > **DDI VIEW**
4. Promote **development of ADMP data model** based on appropriate metadata standards;
- 5-7 DDI Role as collaborator & player in the DMP area > Communicate with other originations

Our interest & contribution to ADMP group (so far)

❖ **Develop use cases** or user stories in the DDI-DMP context

DMP Aims & Requirements of different User Groups

The idea

- ❖ Integrate DMP views of projects & funders & archives
- ❖ Specify DMP Metadata sets & Workflows > integration into Data Lifecycle

DMP aims & requirements

- Ensure quality of data & guide research process
 - Use case Research Projects
- Allow data replication > transparency of findings > preservation > re-use
 - Use case Research Funders
- Enable Preservation > sharing & re-use of data
 - Use case Archives & Repositories

Use Case Outline: User Groups <> DMP information space

Project	Funder	Archive
Data production & analysis	Funding obligations & services	User & Data Services
DMP aims Guidance, Quality, Transparency >	DMP aims Replicability > Preserve > Re-use >	DMP aims > Preserve > Disseminate > Re-use
DM-Planning Cooperate: Standards, Service > re-use Detailed project guidelines ...	DM-Planning (foster cooperation ...) No details about ...	DM-Planning Cooperate: Standards, Service > re-use No details about ...
> DM-Plan: Funder regulation - Project management - Journal regulation ... Archive regulation	> DM-Plan: Project strategy & measure - General project information - Data collection - Documentation and metadata - Storage, organization and security - Ethics, legal compliance & IPR - Preservation and sharing - Responsibilities and resources	> DM-Plan: Majorly project 'products' - Administrative information - Reports ... Questionnaire - Final documentation > Standard - Final Data set ... File formats - Check > IPR, informed consent, privacy - Agreed services ... (< 5.) - Project <> archive cooperation

Summary: Establishing DDI-based DMP > Use case specification

Challenges:

- Tackle diversity of (national) DMP items with DDI means
- Integrate DMP into Data Lifecycle
 - Tec options: XML schema extension <> Model driven approach > DMP View
 - ❖ User perspective > consider specific DMP user & usage context

Next steps to specify the 3 Use Cases - considerations

- ❖ **Investigate common & different DMP information sets** to be exchanged
 - ❖ Compare German DMP with other countries
- ❖ **Investigate re-usable information** sets or items
- ❖ **Specify workflows:** project <> funders / project <> archive
- ❖ **Explore usage of & mapping with (other) standards**

Thank you for your attention!

[uwe.jensen\[at\]gesis.org](mailto:uwe.jensen[at]gesis.org) / [sebastian.netscher\[at\]gesis.org](mailto:sebastian.netscher[at]gesis.org) / [kerrin.borschewski\[at\]gesis.org](mailto:kerrin.borschewski[at]gesis.org)

References

- [1] DFG. 1998. [Safeguarding Good Scientific Practice](#) (web page)
- [2] DFG. 2015. [Guidelines on Handling of Research Data](#) (web page)
- [3] DFG. 2015. [General guidelines for applicants](#) (pdf)
- [4] BMBF. 2012. ... [Richtlinien](#) zur Förderung von Forschung im Bereich ... (web page in German only > Section 4 & 5)
- [5] Arofan Gregory. 2013. [Data Management Planning and the Data Documentation Initiative \(DDI\)](#) (pdf)

Further Sources

forschungsdaten-bildung.de (Empirical Research on Education / project website / in German only)

- e.g. [Forschungsdatenmanagement](#) / [Checkliste Datenmanagement Plan](#) / [Daten Sichern](#)

Alliance of German Science Organisations.

- 2010. [Principles for the Handling of Research Data](#). (webpage) / [PDF Version](#)
- 2014. [Research Data - Outlook and Objectives 2013 – 2017](#). (web page)
- 2015. [Working group Research Data](#). (web page) > Position Paper [Research Data at Your Fingertips](#) (doi)

EC. Horizon 2020. 2015. [Guidelines on Data Management – version 2.0](#) (pdf)

All links accessed: 27.11.2015