

RDM Compas: Building Competencies for the Professional Curation of Research Data

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Extended Abstract.

New areas of scientific research, such as research on big data, computational social sciences, or digitization and the related social changes underline the growing prevalence of data-based-research.

As the relevance of research data increases, more and more standards, processes and criteria in research data management are becoming established, not least with the justification of the FAIR [1] principles: research data should be findable, accessible, interoperable, and reusable. At the same time, the expectations for appropriate handling of research data and comprehensive research data management are increasing: for instance, the submission of a comprehensive data management plan regarding the handling of research data in research projects is now often a requirement by third-party funders or institution-specific RDM policies.

There is no doubt that a research process that is oriented (from the very beginning) to the criteria of comprehensive research data management is a key element in fulfilling the FAIR principles. However, it is equally important to recognize processes in RDM that go beyond the research process itself, such as data preparation, data archiving, and making research data available for subsequent use. These processes are usually essential components of professional data curation, which is crucial as part of an intensive research data infrastructure.

In the German social science research infrastructure, so-called research data centres (RDC) have been established for the data curation of the respective research data. There are now already 42 accredited RDCs, which are essential for archiving and providing social science research data. To meet the associated RDM requirements, curation-specific RDM competencies are mandatory.

If one focuses on the core RDM competencies of data curation, they are quite different from the RDM competencies of appropriately managing research processes. In this context, it is striking that training and continuing education for researchers in RDM topics has already been greatly expanded in recent years. In contrast, training in curation-specific RDM competencies is not yet well advanced and represents a critical gap in the development of data literacy. Accordingly, existing and future RDC staff (as well as data curators in other institutions tasked with curating social science research data) must be equipped with the appropriate RDM competencies.

We are addressing this gap in our project “Developing and exchanging RDM skills” as a working group of KonsortSWD, the Consortium for the Social, Behavioural, Educational and

Economic Sciences in the National Research Data Infrastructure (NFDI). The goal of our project is to provide comprehensive RDM competency training for existing and future staff tasked with curating (social science) research data.

Our project plan envisions several key components of competence training: the core element builds the online platform "RDM Compas: Research Data Management Competence Base", consisting of an education and training centre with modular online trainings on the one hand, and a comprehensive knowledge base covering all topics of curation-specific RDM on the other hand. In addition, a certification option is envisioned for curation-specific RDM competencies.

In the context of our presentation, due to the advanced state of work we want to focus on the knowledge base and present its structure and elements. The structural basis is a slightly simplified version of the Data Curation Lifecycle Model [2] offered by the UK Digital Curation Centre [3]. This lifecycle describes both the basic activities and the sequential process steps of data curation and therefore provides a helpful schema for teaching the necessary RDM competencies.

In order to do justice to the different subject orientations of the RDC, the contents of the knowledge base are divided into different parts: a generic part covers general RDM basics as well as the RDM contents of the sequential process steps, and a subject-specific part addresses the disciplinary specifics of the social, educational, behavioural, and economic sciences.

This structure has already been evaluated once (as of April 2023) in an extensive user study. The feedback from the testers has been taken up and implemented in a revision of the content. The usage tests have shown twofold: first, "RDM Compas" seems to be highly relevant for the target group of RDC employees and other data curators. Second, the structure of the data curation lifecycle we use is helpful in terms of orientation and content organization.

Consequently, with the knowledge base of "RDM Compas" we offer a platform that serves to close an essential gap in the RDM competence transfer: due to its explicit orientation towards the data curation lifecycle and its focus on the target group of data curators and RDC staff, it differs significantly from the previously established offerings in RDM trainings. Thus, our project makes an important contribution to the dissemination and professionalization of RDM competencies in a needs-oriented research data infrastructure.

Keywords: RDM Competencies, Data Curation, Knowledge Base

Competing interests

The authors declare that they have no competing interests.

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