Knowledge Exchange recommendations for a Repository for Training Materials on Research Data Management

Background: Initial workshop and report

In February 2016 Knowledge Exchange (KE) organised a workshop to share successful approaches on current practice around Research Data Management (RDM) training and capacity building provided within institutions and by infrastructure providers (Workshop Report, May 2016). In addition to that KE has run a survey to collect information on current practice around RDM training. The aim of this paper is to raise awareness of the need for a Repository for Training Materials on Research Data Management and to highlight a few requirements for such a repository.

Need for an international repository for Training Materials on RDM

One of the practical outcomes of the workshop was that no international repository for information on training resources currently exists. To make existing nationally focused training material Findable, Accessible, Interoperable and Reusable (FAIR) an international initiative is needed to establish a repository or platform to deposit or link Training Materials on RDM. This would also help to train the urgently needed data stewards requested in the report ‘Realising the European Open Science Cloud’ by the High Level Expert Group on the European Open Science Cloud (EOSC). In today’s changing research environment, there is a clear need for researchers and research support staff (at all stages in their careers) to nurture their skills and know-how in the management of research data. To support training for RDM it would be very helpful for different stakeholders (professors, post-docs, PhD candidates, graduates, undergraduates, librarians, research administrators and others) to easily find Training Materials that can address their specific need for education and by doing so, stimulate and respond to a distinct eagerness to learn.

The role of Knowledge Exchange

Knowledge Exchange has been involved in promoting Research Data Management on several levels and for many years. This includes raising awareness of the value of research data (Value of Research Data report, 2013), looking into funding issues (Funding Research Data Management and Related Infrastructures briefing paper, 2016), making recommendations for motivations and incentives for sharing research data (Sowing the Seed: Incentives and Motivations for Sharing Research Data report, 2014) and looking at federated RDM infrastructures (currently in progress). Knowledge Exchange will try to bring together national Research Data Infrastructures to discuss how the need for a repository for Training Materials on RDM could be tackled.
Six requirements for a repository on RDM Training Materials

1. **Metadata**
   The taxonomy to make Training Materials searchable and findable would have to use a widely accepted ontology and also an interrelation with language versions. It should be expandable and easy to use when adding material. From the FOSTER project the system architecture for the portal along with a selection of use cases as well as the metadata taxonomy could be considered for reuse.

2. **Sustainability**
   Any registry, repository or portal will face sustainability issues, therefore, the Knowledge Exchange suggests those delivering services to collaborate with already existing national or international infrastructures – for example ANDS, DataOne, Research Data Canada, Jisc, EUDAT. In order for this to be sustainable it would be better to be a part of some established services to share costs and materials by working together. Such a cooperation might encourage deposit by the respective country/constituency and allow for aggregation at country level as well as providing a generic search across all resources.

3. **Local Integration**
   The service should also have local links to library schools, to professional associations, research data training networks, post graduate training centres etc. to prevent the slow decay of relevance by staying current with user requirements, ensuring active use and providing for the ingest of new training material.

4. **Language issue**
   Although researchers and staff are sufficiently proficient in using the English language, the service should enable the findability of material that would have been created in other languages, e.g. Danish, Dutch, Finish, French or German. The language issue should be managed within the metadata.

5. **Deposit and Link**
   A repository should offer at least two options: 1) deposit and store Training Materials and 2) offer to integrate Training Materials stored elsewhere by assigning metadata.

6. **Persistent Identifier**
   Assigning a DOI to all deposited Training Materials will make the material citable, sustainable and easy to find.

Already existing approaches, repositories and interest groups

The FOSTER project ended in July 2016, but the portal is still open and accepting materials. You need to register before you can add content. Beside other Open Science topics there is a lot of material available regarding Research Data Management. Material which is probably of interest for an international repository of Training Materials can also be found in projects and initiatives that are no longer maintained, e.g. DigCurV: Digital Curator Vocational Education was an EC project but is no longer active and Jorum, Jisc’s learning materials repository. Jorum is being retired, but much of the content
will be available via the Jisc “App Store”, currently under development. Repository functionality might be considered in the future if requirements for standards around metadata emerge from the community, as it would maximise the potential of the resources available via the App Store. Initially those resources will be sourced from Jorum and from selected engagements that Jisc makes but once the service support is in place, submissions will be opened up to any registered user. The RDA interest group on ‘Education and Training on handling of research data’ aims to exchange information about existing developments and initiatives and promotion of training/education to manage research data throughout the data lifecycle. EDISON is a 2 year project (started September 2015) with the purpose of accelerating the creation of the Data Science profession. CODATA, in cooperation with RDA, is developing Research Data Science Summer Schools, the first of which was organised with DCC in August 2016 in Trieste.

Recommendations

The Knowledge Exchange Expert Group on Research Data highly recommends the establishment of an international repository for Training Materials on RDM:

- National Research Data Infrastructure providers should work together to initiate the setup, hosting, metadata development and sustainability of a repository
- A cooperation with European projects like EUDAT, FOSTER or the EOSC (pilot) would help to make the training material Findable, Accessible Interoperable and Reusable (FAIR)
- Knowledge and experience from developments of Open Educational Resources (OER) should be used, e.g. the intertwining of resources with didactical practice, the significant investment towards the release of this ‘into the public domain’, the need of branding for qualitative Training Materials, or the problem of copyrighted material and how to share it
A list of RDM Training resources from the KE survey

With the help of the survey, KE also collected a list of resources which could be used as input for an international repository for Training Materials on Research Data Management:

Finland
http://libguides.oulu.fi
http://libguides.ulapland.fi/c.php?q=120377&p=785074
https://wiki.helsinki.fi/x/5xiBQ

France
https://www6.inra.fr/datapartage/Gerer/Stocker/Portail-de-donnees-INRA
https://opidor-preprod.inist.fr/
http://coop-ist.cirad.fr/gestion-de-l-information/gestion-des-donnees-de-la-recherche/s-initier-en-ligne-aux-donnees-de-la-recherche/familiarisez-vous-avec-le-concept-de-donnees-de-la-recherche
http://www.univ-paris-diderot.fr/ac/site.php?bc=recherche&np=Data_DMP
http://www.doranum.fr/
http://corist-shs.cnrs.fr/gestion_donnees_recherche_guideetformation_7

Germany
http://www.forschungsdaten.org/index.php/Ausbildung_und_Qualifikation
http://www.gfbio.org/training
http://www.gfbio.org/education-modules
http://www.nestor.sub.uni-goettingen.de/education/index.php
http://www.nestor.sub.uni-goettingen.de/bestandsaufnahme/index.php
http://www.nestor.sub.uni-goettingen.de/school_2016/index.php
http://wiki.scc.kit.edu/gridkaschool/index.php/Main_Page
http://www.rdm.kit.edu/
https://github.com/bgruening/training-material
https://github.com/bgruening/galaxy-tricks
https://github.com/bgruening/docker-galaxy-stable
http://www.auffinden-zitieren-dokumentieren.de
http://www.fdm.uni-hannover.de/schulungenveranstaltungen.html
http://www.fdm.uni-hannover.de/dfm-faq.html
http://diversityworkbench.net/Portal/Training_materials
http://www.eresearch.uni-goettingen.de/content/workshops-trainings
https://zenodo.org/record/18225
https://www.cms.hu-berlin.de/de/dl/dataman/support/material

Netherlands
http://www.ru.nl/library/services/research/researchdata/
http://datamanagementplancourse.pbworks.com
http://datasupport.researchdata.nl/en/
https://dx.doi.org/10.6084/m9.figshare.1285313

United Kingdom
http://datalib.edina.ac.uk/mantra/
http://www.dcc.ac.uk/training
https://www.ukdataservice.ac.uk/
https://www.ukdataservice.ac.uk/use-data
https://www.ukdataservice.ac.uk/manage-data/training
http://researchdata.leeds.ac.uk/
http://www.lse.ac.uk/library/usingTheLibrary/academicSupport/RDM/

International
https://vimeo.com/galaxyproject
https://zenodo.org/communities/dcc-rdm-training-materials/?page=1&size=20