OER.NET: A Hub for RDM-OER for the Humanities and Social Sciences – Perspectives on Metadata

NFDITalk on May 19th 2025

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What is the OER.NET group and what are they doing?

What is the OER.NET group and what are they doing?

- 2023:
  - Contact between DALIA and various RDM-projects (online workshops and direct contact)
  - The need for discipline-specific discourses emerged
  - Work in concentric circles
- 2024
  - First workshop at the Academy of Science and Literatur in Mainz in April 2024 with DALIA, NFDI4Culture, NFDI4Memory, HERMES, and QUADRIGA
  - Continuation of the discussions in Rocket.Chat and regular meetings → a new group, the OER.NET, was born
- 2025
  - Second workshop at the Hochschule Darmstadt in February 2025 with DALIA, NFDI4Culture, NFDI4Memory, Text+, KonsortSWD, HERMES, QUADRIGA, WiNoDa, SODa, and KODAQS
  - Continuation of the discussions via mailing list and sub-working groups (RDM-base module, metadata and picklists, quality criteria)

DALIA-Metadata Schema for Open Educational Resources

This project with the funding code 16DWWQP07A was funded by the Federal Ministry of Education and Research (BMBF) and the funding measure from the EU's Capacity Building and Resilience Facility.

Motivation: Why do we develop a metadata schema for OER?

- Each platform, including DALIA, requires consistency in metadata formats.
- OER have different forms and formats, and belong to different fields.
- Projects compile their own metadata schemas, there are different data standards and authority files.
- While some notions, such as *Beschreibung/description*, are relatively consistent, others are used in different ways, e.g. *type* und *format*.
- The metadata standard should be comprehensible, concise (to be used as a minimal standard), in English, compatible with formal requirements and with the project's ontology, mappable to other standards, extensible, but backwards compatible. Intended side effects: means of communication, means of inspiration.

DALIA Interchange Format (DIF) in a Nutshell

Geiger, Jonathan, Petra Steiner, Abdelmoneim Amer Desouki & Frank Lange (2024). *DALIA Interchange Format*. Zenodo. DOI: 10.5281/zenodo.11521029.

- **Mandatory 4**
- **Recommended 11**
- **Optional 3**

DALIA platform: https://search.dalia.education/basic

attribute name	mandatory, recommended, optional	description	values (constraint type : constraint)	examples
Authors	M	Name of the person(s) or organization(s) who created (write, make, present, ...) the resource. If unknown, then write n/a.	surname, prename : {ORCID} * (M, M, R) surname, prename : {ORCID} * (M, M, R) organization : {ROR > Wikidata} * (M, R)	Mustermann, Max : {https://orcid.org/0000-0001-2345-6789} * Musterfrau, Paula * Müllermeier, John * Musterkollegin, Alex : {232456} * NFDI4Example1 : {organization https://ror.org/05qj6w324} * NFDI4Example2 : {organization http://www.wikidata.org/entity/Q96678459} * Orga-identifierunknown : {organization} *
License	M	An object that links to a license	Please take a link from https://github.com/spdx/license-list-data/tree/m	https://github.com/spdx/license-list-data/blob/main/rdfturtle/CC-BY-SA-4.0.ttl
Link	M	the hyperlink of the original resource	URI > DOI > URL > other PIDs	https://testtesttest.de
Title	M	title (and subtitle) of the resource	open	cool learning resource. with a cool subtitle
Community	R	associated community(ies) of the resources	picklist: Konsortien from https://www.wikidata.org/wiki/Q61658497 (NFDI) has_subsidiary > ROR name > name (string)	NFDI4Culture DALIA
Description	R	description of the resource	open	This is a very cool learning resource for research data management.
Discipline	R	the discipline or university/college subject the learning resource belongs to	picklist: https://skohub.io/dini-ag-kim/hochschulfaechersystematik/heads/master/w3id.org/kim/hochschulfaechersystematik/scheme.html	Computer Science, interdisciplinary
FileFormat	R	the (technical) file format, physical medium, or dimensions of the resource	picklist based on MIME file types (extensions): https://mimetype.io/all-	PDF
Keywords	R	essential and characteristic topics or content of the resource	open, but picklist recommended: https://id.loc.gov/authorities/subjects.html, https://www.wikidata.org/wiki/Wikidata:Main_Page, https://portal.dnb.de/opac/newSearch?currentView=simple&selectedCategory=any	metadata, open educational resources
Language	R	language of the resource, 2 char code preferred	picklist: ISO 639-1 (two characters, e.g. en) > ISO 639-3 (three chara see https://www.loc.gov/standards/iso639-2/php/code_list.php https://de.wikipedia.org/wiki/Liste_der_ISO-639-Sprachcodes	de
LearningResourceType	R	The pedagogical type of the resource: information for the educational use. This includes the most specific type: rather "tutorial" than "article". If the learning resource consists of material, e.g. an article: add bibo document type (article, book etc.).	picklist: from https://skohub.io/dini-ag-kim/hcrt/heads/master/w3id.org/kim/hcrt/scheme.html and https://schema.org/learningResourceType bibo:Article; bibo:Book; bibo:Report; bibo:Webpage; bibo:Thesis hcrt:diagram; hcrt:educational_game; hcrt:case_study; hcrt:Experiment mo:Poster; mo:Lecture; mo:Tutorial; mo:JupyterNotebook; mo:Best-Practices	Lecture
MediaType	R	General type of data content encoded in a computer file. Digital media type of the resource. If the resource consists of more than one item, choose "multipart" and provide the relations in the field "RelatedWork". If the media type should be physical (CD-ROM, audiotape etc.), choose from https://ceds.ed.gov/element/001401.	picklist: audio, video, text, presentation, code, image, multipart schema:VideoObject etc.	text
ProficiencyLevel	R	the proposed level of proficiency of the learners	picklist: novice, advanced beginner, competent, proficient, and expert.	novice, advanced beginner
PublicationDate	R	publication date of the resource	Please use the ISO 8601 format (https://www.iso.org/iso-8601-date-and-time-format.html). If the full date is unknown, month and year (YYYY-MM) or just year (YYYY) may be used.	2024-03-31
TargetGroup	R	Refers to learning resource and learners: A class of agents for whom the learning resource is intended or useful.	picklist: BA student, MA student, PhD, data steward	BA student, MA student, PhD, data steward
RelatedWork	O	The didactic relations to other learning resources: is part of, has part, or is based on (prerequisite), isSupplementOf, isSupplementTo. Please provide the links of these resources.	picklist: hasPart:LINK or isPartOf:LINK or isBasedOn:LINK or isSupplementTo:LINK or isSupplementOf:LINK or "No related work."	No related work.
Size	O	size of the resource in megabyte	number MB	10 MB
Version	O	the version of the learning resource	open	2.3

DIF as Tabular Application Profile

The description elements are essential for the metadata specification.

attribute name	mandatory,	description	values (constraint type : constraint)	examples	cardinali	data type	propertyID	comment
Authors	M	Name of the person(s) or organization(s)	1. for persons: surname, prename : {ORCID} (Mandatory, Mandatory,	(1) Mustermann, Max : {https://orcid.org/0000-0001-2345-6789} *	1..n	xsd:string	schema:author	Names and ORCIDs or RORs. ORCIDs are highly
License	M	license identifier of the resource	the "identifier" column from https://spdx.org/licenses/, e.g. "CC-BY-4.0"	(1) CC-BY-SA-4.0	1	xsd:string	dcterms:license	
Link	M	the hyperlink of the original resource	URI > DOI > URL > other PIDs	(2) https://data-affairs.affective-	1..n	xsd:anyUR	schema:url	

Every attribute is described by:

- attribute name (instead of propertyLabel)
- mandatory, recommended, optional
- description
- values (constraint type: constraint)
- examples
- cardinality
- data type
- propertyID
- comment

Mappable to Application Profiles:

- DC-TAP (Coyle et al. 2023)
- consistent with SHACL (Knublauch & Dimitris Kontokostas 2017)
- similar to Hobelheinrich (2023).

Insights from the consortium NFDI4Culture

NFDI4Culture is funded by the Deutsche Forschungsgemeinschaft (DFG) – 441958017

Educational Resource Finder (ERF)

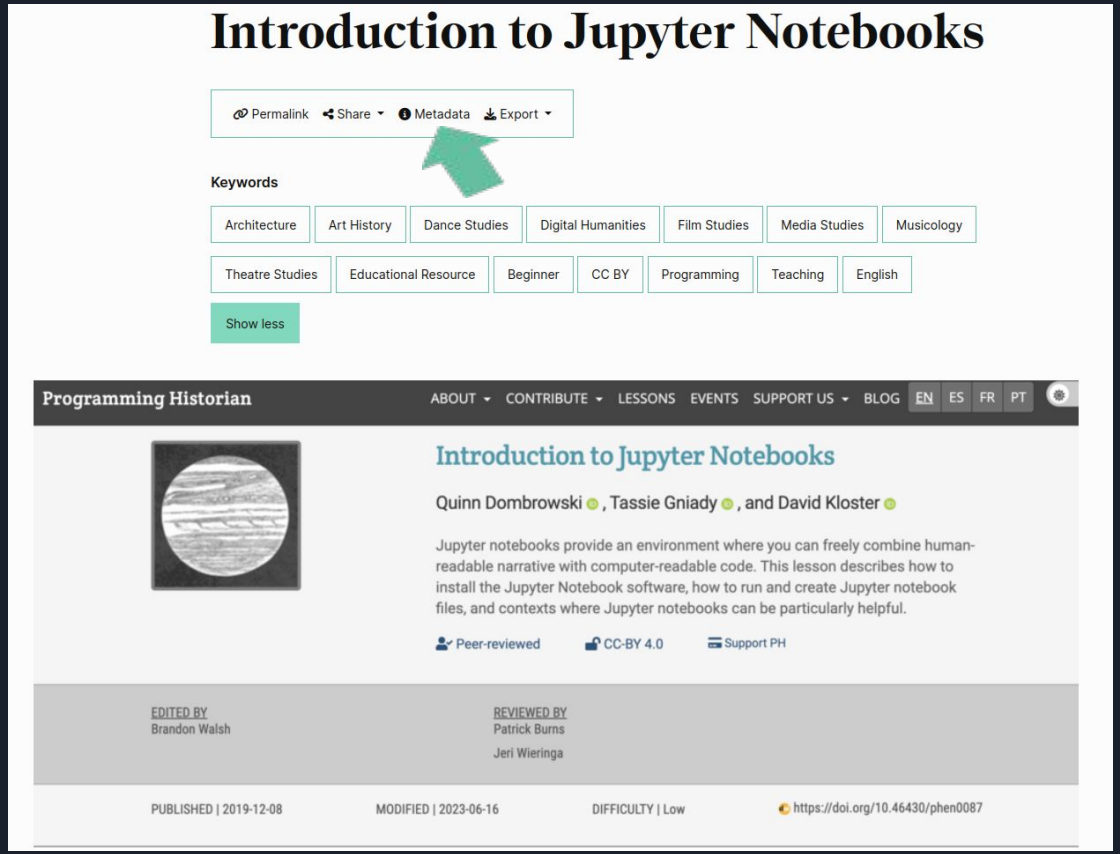
- A service with a curated list of external training offers and open educational resources
  - addressing our 4Culture-Community
- In the development stage, close exchange with DALIA
- Metadata have been chosen according to existing structures of our Culture Information Portal
  - TaDiRAH Ontology
  - Based on close exchanges with other consortia and projects

Here's our ERF!

attribute name (DIF)	4C-Mapping
authors	vgl. publisher
license	license
link	url
title	name
community	community
description	description
discipline	subject area
file format	/
keywords	keywords
language	language
learning resource type	/ (geplant)
media type	/ (geplant)
proficiency level	vgl. educational level
publication date	date created
target group	/
Related Work	/
Size	/
Version	~ last updated

Mapping the DIF to 4Culture's OER-Metadata for the Export to DALIA

Educational Resource Finder



Educational Resource Finder

Published by:

The Programming Historian

Creation Date:
08. December 2019

Updated:
16. June 2023

Target Group

There ist no concrete Target Group and the course can be absolved without previous knowledge of Jupyter Notebooks. But a skilled use of a computer and basic Data and Code Literacy are recommended.

Costs

The course is free of charge.

Technical Requirements

Besides an internet connection and a working Browser there are no further technical requirements to use this offer. An installation of some Python modules on the users system can be required, depending on the type of notebook the user wants to run, but the course is guiding through this process as well.

Processing time

The time duration and working load depends on the prior level of knowledge of the participants.

Educational Resource Finder

Persistent Identifier: <https://nfdi4culture.de/id/E4473>

Introduction to Jupyter Notebooks

Retrieve record as:

RDF/XML | Turtle | N-Triples | JSON-LD

type

schema : LearningResource

fabio : InstructionalWork

url

https://programminghistorian.org/en/lessons/jupyter-notebooks

dateModified

2023-06-16

image

name

Introduction to Jupyter Notebooks

dateCreated

2019-12-08

Educational Resource Finder

description

The self-study course offers an introduction to Jupyter Notebooks. Thematically it starts with the installation of the Software, teaches first operations with the system and eventually shines a light on advanced use cases, like the transformation from Python code into Jupyter Notebooks. Furthermore it offers informations on how to use Jupyter Notebooks in Teaching.

subjectArea

Architecture
Art History
Dance Studies
Digital Humanities
Film Studies
Media Studies
Musicology
Theater Studies

inLanguage

EN

educationalLevel

Beginner

license

CC BY 4.0

keywords

Programming
Teaching

publisher

The Programming Historian

Educational Resource Finder

Aims & Services

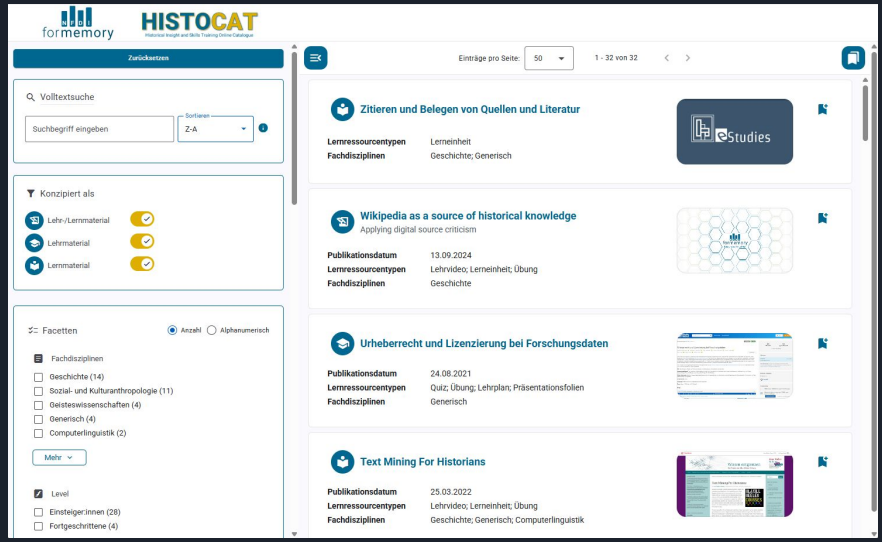
- Conceptualizing and advertising generic and subject specific training offers for researchers, employees from universities, cultural heritage and GLAM institutions
- Consultation on topics like data & code literacy in our communities
- Implementation and evaluation of training offers
- Helpdesk for questions concerning Qualification & Training

Adaption of the DALIA Interchange Format by NFDI4Memory

This work was produced as part of the NFDI consortium 4Memory (www.4memory.de).
We gratefully acknowledge the financial support of the German Research Foundation (DFG) - project number 501609550.

HISTOCAT | **H**istorical **I**nsight and **S**kills **T**raining **O**nline **Cat**alogue

- Curated collection of teaching and learning materials for historical disciplines
- Database with precise descriptions and tagging of resources
- Search platform for easy access
- Materials contributed by experts from the historical academic community and the Task Area “Data Literacy”
- Reviewed for relevance and currency
- Regular updates to the content



Metadata Mapping

- Mapping with DIF 1.3
- Using propertyIDs of DIF for database field names
- Documentation of deviations
  - Subforms for more precise descriptions
  - Definition of lists

attribute name DIF 1.3	4M-Mapping	Kommentar zum 4M-Mapping
Authors	Mitwirkende	Mehrfachauswahlliste mit Zusatzfeldern für IDs und Rollen
License	Lizenz	Mehrfachauswahlliste
Link	Link	
Title	Titel	zusätzliches Feld für Untertitel
Community	-	
Description	Beschreibung	formatierbares Volltextfeld
Discipline	Fachdisziplin	Mehrfachauswahlliste (hierarchisch). abgeleitet aus den Materialien orientiert an Dstatis
FileFormat	Dateiformat	Mehrfachauswahlliste
Keywords	Schlagwörter	Mehrfachauswahlliste - Aufteilung in verschiedene Bereiche Themen, Tools, Methoden, Stichwörter
Language	Sprache	Mehrfachauswahlliste (639-1)
LearningResourceType	Lernressourcentyp	Mehrfachauswahlliste - eigenes Vokabular inkl.

Refining DIF during application

- Refining Author Metadata
  - Incorporated roles and used vocabularies from CREDIT and DataCite
- Clarifying Definitions
  - Refined definitions of learning resource types, target groups, and skill levels
- Additional Categories
  - Added learning objectives and prior knowledge categories
- Categorizing Keywords
  - Organized keywords into RDM-issues, tools, and methods

Lernressourcentypen
Lehrvideo

Level
Einsteiger:innen; Fortgeschrittene

Medientypen
Video

Methoden
Qualitative Datenanalyse

Sprachen
deutsch

Themen
Data Literacy; Datenanalyse

Tools
MAXQDA

Veranstaltungstypen
Webinar

Zielgruppen
Forschende

Mitwirkende
German Historical Institute London (Herausgeber:in)
Blaxill, Luke (Autor:in)
Beelen, Kaspar (Autor:in)

Lernziele
Der Kurs soll Kompetenzen in den digitalen Geisteswissenschaften aufbauen und den Kursteilnehmern helfen, das Vertrauen und die Fähigkeit zu entwickeln, Text Mining und die quantitativen Techniken, die oft zur Interpretation der Ergebnisse erforderlich sind, in ihrer eigenen historischen Forschung einzusetzen. (Quelle: Text übersetzt aus Ressource, letzter Stand: 02.12.2024)

Vorkenntnisse
Grundkenntnisse in digitalen Methoden

(some examples)

Synergies & Next steps

Key Insights

One size doesn't fit all:

Each community has valid reasons to adapt metadata schemas to meet their specific needs.

A base in the scientific community is crucial:

Standards like Metadatenschema für Schulungsmaterialien zum Thema Forschungsdatenmanagement (old version), Hoebelheinrich et al. (2023), LRMI, and AMB provide a framework for domain-specific developments.

Collaboration drives evolution:

Exchange between communities leads to the continuous improvement of a shared schema.

Image: AI generated

Learnings

- We gain a lot from extensive communication and regular exchange
- Working in a group brings greater quality and acceptance of “standards”

- Our joint work...
  - ... reduces project-individual resources.
  - ... enhances the interoperability and compatibility of the developed Open Educational Resources as well as catalogs.
- We are creating synergies in...
  - ... workshops.
  - ... smaller working groups on specific topics.
  - ... the exchange via our Rocket.Chat channel and the group’s mailing list.

Are we done with our version of DIF or are there still outstanding tasks?

We are not finished!

- Definition of some fields & pick lists in particular are a challenge
  - TargetGroup
  - LearningResourceType
  - MediaType
  - ProficiencyLevel
- A few new optional attributes: contributors, teaches (for learning objectives/outcomes)

Thank you!

Contact

oer.net@listserv.dfn.de

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Links

- DALIA Platform: https://search.dalia.education/basic
- HISTOCAT: https://4memory.de/unterstuetzung/lehren-lernen/histocat/
- ERF: https://nfdi4culture.de/services/details/educational-resource-finder.html