

ARDC Training Materials Metadata Checklist V1

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Introduction

The Australian Research Data Commons (ARDC) Training Materials Metadata Checklist aims to support learning designers, training materials creators, trainers and national training infrastructure providers to capture key information and apply appropriate mechanisms to enable sharing and reuse of their training materials. Once implemented, the metadata facilitates the discovery, development and delivery of new digital research and data skills activities and materials.

The provision of enriched metadata for training materials enables others to assess whether the materials are appropriate and reusable to their own settings. Context and sufficient detail are required to enable humans and machines to find, access, interoperate and reuse such materials

The Checklist is inspired and informed by the Ten simple rules for making training materials FAIR (Garcia et al, 2020) and international metadata schemas such as schema.org and [BioSchemas](https://bioschemas.org) (09-draft-2020 profile - TrainingMaterial). An additional driver for creating the Checklist is the development of the national infrastructure for digital research skills training, the Digital Research Skills Australasia (DReSA) portal.

Benefits

Standardising metadata for training materials yields great benefits:

- Enables findability through improved search filtering and browse capabilities for users
- Aids human and machine readability
- Enhances the ease of automatic aggregation by training registries
- Provides trainers with greater visibility for potential collaboration opportunities
- Improves national and international coordination and collaboration with reuse in mind
- Enables reuse of materials by others with explicit reuse conditions
- Provides ease of use by trainees because what they need to know and what they will learn is made explicit
- Enables citation and receipt of credit for authors and collaborators
- Enables the mapping of existing materials into learning paths (which can combine materials from different providers)
- Supports FAIR training materials

Out of scope

In the process of sharing and FAIRifying training materials there are factors that need to be considered and are not specifically addressed in this Checklist:

- Criteria for choosing a suitable repository
- The importance of persistent identifiers (PIDs) or mechanisms for minting them
- Training materials registries and aggregation methods
- Applying appropriate access rules to training materials
- Interoperability and file formats
- Choosing appropriate licences for materials
- Versioning of materials

Checklist

Required	Recommended	Optional
<input type="checkbox"/> Title	<input type="checkbox"/> Index/Syllabus	<input type="checkbox"/> Field of Research code
<input type="checkbox"/> Description	<input type="checkbox"/> Audience	<input type="checkbox"/> Pre-requisites
<input type="checkbox"/> Identifier(s) (DOI, URL)	<input type="checkbox"/> Learning objectives	<input type="checkbox"/> Date created
<input type="checkbox"/> Licence(s)	<input type="checkbox"/> Author(s)	<input type="checkbox"/> Date modified
<input type="checkbox"/> Keywords	<input type="checkbox"/> Contributor(s)	<input type="checkbox"/> Date published
<input type="checkbox"/> Contact	<input type="checkbox"/> Time required	<input type="checkbox"/> Work status
		<input type="checkbox"/> Learning resource type
		<input type="checkbox"/> Version
		<input type="checkbox"/> Subsets of this material
		<input type="checkbox"/> This material is part of

We recommend that these fields are made available as a separate file from the materials (for machine discoverability and action). They should also be presented in a visible location (such as the README or DESCRIPTION files) on digital versions of training materials (for human search, and reuse).

Acronyms explained

- DOI** Digital Object Identifier, is a string of numbers, letters and symbols used to permanently identify an article or document and link to it on the web.
- DRESA** Digital Research Skills Australasia—a national-level training portal built by the digital research trainer community for browsing, discovering and organising training resources collected from third parties in Australia and New Zealand.
- FAIR** Principles related to Findable, Accessible, Interoperable and Reusable.
- URL** Uniform Resource Locator. A URL is the address of a given resource on the web.

Term descriptions

The checklist terms have been described for the benefit of the person providing the training materials data. To clarify, training materials for this purpose are defined as both a single training material (for example slide deck) or a collection of materials associated with a training session (for example slides, handout, dataset).

Note for infrastructure implementers, these terms are documented separately in more detail. If interested in obtaining this documentation, please email contact@ardc.edu.au.

Ten simple rules for making training materials FAIR: <https://doi.org/10.1371/journal.pcbi.1007854>

Required

TERM	DESCRIPTION	RULES
Title	Name/title of the training material (maximum 15 words).	
Description	Text describing the topic. How the training materials are/were used and in what context.	<p>Rule 2: Improve findability of your training materials by properly describing them.</p> <p>Rule 8: Make your training materials usable for trainees.</p>
Identifier(s)	Add one or more identifiers (DOI, URL). For example a URL to the landing page for the Training material. You can include the citable locator to the resource, such as a Digital Object Identifier (DOI), however a link to the digital resource is enough. If different links exist for parts of this resource we recommend adding those to the optional field "subsets of this material".	<p>Rule 1: Plan to share your training materials online.</p> <p>Rule 3: Give your training materials a unique identity.</p> <p>Rule 4: Register your training materials online.</p> <p>Rule 10: Keep your training materials up-to-date.</p>
Licence(s)	A URL to the licence or licences of this resource. While including a URL is strongly recommended to enable the licence to be machine-actionable, in the absence of one a textual description of the licence is adequate.	<p>Rule 5: Define access rules for your training materials.</p> <p>Rule 7: Make your training materials (re)usable for trainers.</p> <p>Rule 9: Make your training materials contribution friendly.</p>
Keywords	A short list of words that identify the training resource topics (maximum 10).	<p>Rule 2: Improve findability of your training materials by properly describing them.</p>
Contact	Include the first name, last name and contact details of a person or organisation that can be contacted about the training material.	

Recommended

TERM	DESCRIPTION	RULES
Index/Syllabus	A list in the form of dot points to highlight content syllabus or an overview of the topics.	Rule 2: Improve findability of your training materials by properly describing them. Rule 8: Make your training materials usable for trainees.
Audience	A succinct description of the intended target audience for your materials: e.g., graduates, postgraduates, clinicians.	
Learning objectives	A list in the form of dot points to highlight what people can expect to learn from this material.	
Author(s)	Those individuals or organisations involved in the preparation, creation and/or presentation of the published work, specifically writing the initial draft. Add last Name, first name, affiliation, ORCID, and contact details.	Rule 2: Improve findability of your training materials by properly describing them.
Contributor(s)	Key contributors to a training resource can be included by name and/or by organisation name.	
Time required	The estimated time it takes to work through this resource in hours.	

Optional

TERM	DESCRIPTION	RULES
Field of Research code Australia and New Zealand	Use 6 digits of version 2020 (select from the classification view of the Stats NZ government page).	
Competency required	What do people need as background to efficiently understand this material.	
Date created	Year is adequate. Detailed format day-month-year recommended.	
Date modified	Year is adequate. Detailed format day-month-year recommended.	
Date published	Year is adequate. Detailed format day-month-year recommended. This date is often system generated.	
Learning resource type	This may include things such as video, tutorial, slides, online lessons.	Rule 6: Use an interoperable format for your training materials.
Version	If this training material is versioned, it is strongly recommended you use this property to list the version being displayed.	
Subsets of this material	Identifier(s) URL or DOI for each sub-training material.	
This material is part of	Identifier URL or DOI for other training material this training material is a part of (for example, if this is a module in a book, isPartOf can describe the book).	

References

Garcia L, Batut B, Burke ML, Kuzak M, Psomopoulos F, Arcila R, et al. (2020) Ten simple rules for making training materials FAIR. PLoS Comput Biol 16(5): e1007854. <https://doi.org/10.1371/journal.pcbi.1007854>

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