Selection Criteria for Educational Resources included in the Data Management Training Clearinghouse (DMTC)

## Revised 8 November 2021

## **Definition:** **“*Educational resources*” are downloadable or interactive digital assets that can be used as teaching, learning, and assessing resources as well as those used for educational research purposes.**

(Adapted from <https://en.wikipedia.org/wiki/Open_educational_resources> )

**Scope of topics:**

Within the broader term “educational resources”, the inventory of resources included in the DMTC are primarily comprised of *teaching* and *learning* resources given our target audiences of research data “teachers” and “learners.” Topics to be included in the DMTC are limited to those on research and data lifecycles including research data management; building skills, competencies and capabilities related to research data; research data sharing and reuse where appropriate; and best practices for creating and managing high quality research data. The primary subject domains for the educational topics are those in science, technical, engineering, and medicine (STEM), social science, education and training, and arts and humanities. Other research topics may be included if the primary focus of the educational resources is upon teaching research data skills.

**Specific criteria to be considered beyond topic: 1) Learning resource type; 2) Format (media type); 3) Target audiences; 4) Subject discipline covered; 5) Uniqueness of topic coverage or method of instruction.**

1. **Learning resource type:** (category for what kind of learning resource is being described)

**Most used:**

* **Course** (series of units and lessons used to teach the skills and knowledge; often associated with a broader curriculum
* **Unit** (long-range plan of instruction on a particular concept containing multiple, related lessons)
* **Lesson** (detailed description of an element of instruction in a course that could be contained in a unit of one or more lessons; has been used for presentation slides on a topic)
* **Demonstration / Simulation** (imitation or modeling of a real-world process; has been used for tutorials on tools used or processing done within the research data lifecycle)
* **Learning Activity** (guided or unguided activity engaged in by a learner to acquire skills, concepts or knowledge that may or may not be defined by a lesson; has been used for data “recipes”, data exercises or other hands-on activities)
* **Educator Curriculum Guide** (provides definition of what concepts should be taught and /or how a concept should be taught effectively; has been used for course syllabi)
* **Images / Visuals** (standalone representation of a concept used to instruct visually including, but not limited to, pictures, graphics, diagrams, figures, illustrations, charts, and maps; has been used for posters and one page reference guides)

**Available, but rarely used:**

* **Text** (body of a printed work, to include reading passages; only used if part of a collection of digital assets. [See Format/Media Type below for definition of “collection.”] Published papers, downloadable textbooks and static web pages are generally out of scope)
* **Textbook** – (digital book used as a standard source of information on a particular subject, generally out of scope)
* **Primary source** – (artifact, document, recording or other source of information created at the time under study and provides first-hand testimony or direct evidence concerning a topic under investigation)
* **Assessment** (evaluation, measurement and documentation of the skills or knowledge gained from instruction) the types of assessment could include:
  + Alternate assessment – used to evaluate he performance of students who are unable to participate in general assessment even with accommodations
  + Assessment item – specific part of an assessment that, when answered by a learner, is used to determine whether a learning object has been achieved
  + Formative assessment – process used during instruction to adjust ongoing teaching and learning activities and to improve students’ achievements of intended instructional outcomes
  + Interim / Summative assessment – instrument used to evaluate student learning at the end of an instructional unit by comparing it against come standard or benchmark.
  + Self-assessment – in which a user gathers information about and reflects on their own knowledge, skills, learning or attitudes

1. **Format / Media Type:** (physical medium of the learning resource)

**Most used:**

* **Collection** (group of set of items that comprise a single learning resource, e.g., downloadable slides from a presentation, plus a PDF version of the slide presentation, an audio file of the presentation, and a textual representation of the oral transcription of the presentation)
* **Event** (time-based happening that is portrayed or covered by the learning resource, e.g., a recorded webinar)
* **Dataset** (collection of information organized in logical record and block structures for use by a computer)
* **Interactive Resource** (requires a user to take action or make a request in order for the content to be understood, executed or experienced)
* **Moving Image** (explains a concept or tells a story using sound plus a sequence of visual images that give the illusion of continuous movement, e.g., a movie)
* **Presentation** (representation of the particular way in which an author shows, describes or explains one or more concepts, e.g., a set of Powerpoint slides)
* **Software** (programs used to direct the operation of a computer and related devices)
* **Sound** (an explanation of a concept or story using audio means within the acoustic range available to humans, and differentiated from audio visual resources, i.e., audio only)
* **Static Image** (a single visual representation that does not change, e.g., a poster explicating a concept)
* **Text** (an explanation of a concept or story using human readable characters formed into words, usually distinguished from graphical images)

**Available, but rarely used:**

* **Animation** (a method of making a series of drawings, computer graphics or photographs that appear to move)
* **Artifact** (physical object produced at some point in the past that attests to a given set of practices and ways of viewing a concept)
* **Service** (self-contained unit of functionality that enables operations or capabilities, e.g., providing searching for instructional resources on data skills)
* **Physical Object** (entity that has a physical presence in the present, as opposed to an artifact of the past)

1. **Target Audience(s):** (a class of agents for whom the resource is intended or useful)

* **Research Faculty** (professor in a college or university who is free to devote their entire time to research, and who has achieved faculty status at any level)
* **Research Scientist** (a person learned in science of any discipline who is conducting research: a scientific investigator)
* **Mid-career Research Scientist** (a research scientist with a doctoral degree who has been conducting research more than 5 years after graduate school)
* **Early-career Research Scientist** (a research scientist with a doctoral degree who is from 0 – 5 years out of graduate school including post-doctoral researchers)
* **Graduate Student** (a student in a graduate program at a college or university, usually having already received a baccalaureate from a college or university)
* **Undergraduate Student** (a student at a college or university taking courses who has not received a first and especially a bachelor’s degree)
* **High School Student** (a student at a school especially in the U.S. in grades 9 – 12 or 10 – 12)
* **Middle School Student** (a student at a school especially in the U.S. in grades 5 – 8 or 6 – 8)
* **Data Supporter** (a person providing technical assistance to another person, group or organization creating, managing or storing data)
* **Data Manager** (a person responsible for ongoing management of research data, often in a repository or data service center)
* **Librarian** (a specialist providing assistance to researchers and other data supporters, managers, and professionals in making data and metadata available and accessible for use and reuse)
* **Educator** (a person who is skilled in teaching)
* **Repository Manager** (a person who exercises executive, administrative and supervisory direction of a place storing data)
* **Data Professional** (a person providing specialized services related to data who has acquired special education, training or skill in data science, data management, data stewardship and/or data curation)
* **Data Policymaker** (a person responsible for making or implementing a high-level overall plan embracing the general goals and acceptable procedures related to research data)
* **Publisher** (a person or organization responsible for producing, releasing and disseminating data products)
* **Technology Expert Group** (a group of people working together to identify, implement and disseminate the specialized aspects of a particular field of endeavor)
* **Funding Organization** (an organization making available and administering a special fund)
* **Citizen Scientist** (a member of the general public who collects and analyzes data relating to the natural world, typically as part of a collaborative project with professional scientists.)

1. **Subject discipline / domain covered:** (Source: RDA ETHRD-IG compilation; subject to additions as new learning resources are added)

Table

Description automatically generated with medium confidence

Graphical user interface, application

Description automatically generated with medium confidence

1. **Uniqueness of topic coverage or instructional method:**

Other factors should be considered when deciding whether to publish information about a learning resource in the DMTC that may include the uniqueness of extent, range, approach and coverage of a topic; the instructional approach that would make the learning resource interesting and useful for various learning styles; and the authority or expertise of the authors and/or publishers of the resource.

**Examples of Edge Cases for discussion:**

From WDS Resource Guide:

* World Glacier Monitoring Service, Zurich
  + <http://wgms.ch/projects/>
  + Issue: are schools for training researchers, but no apparent mention of data management per se; could be considered part of research life cycle; step for gathering or analyzing data for this particular domain. Seems out of scope due to lack of specific discussion of data management w/in course materials. Also only PDFs of slides and/or outlines.
* The Royal Society of New Zealand
  + <https://drive.google.com/a/icsu-wds.org/file/d/0ByyGtY4J2lcadjRtd1U2QlpWdjQ/view?usp=sharing> (need permission to access)
  + Issue: Useful paper that could be included in a course bibliography or resource list course syllabus, but not a training resource per se. So, out of scope.