

SwissDS-ENV Data Steward Skills and Abilities Grid

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SwissDS-ENV: Skills and Abilities Grid - Data Stewardship

Context

This grid lists the skills and abilities specific to Data Stewardship, according to the references given and taking into account the individual institutional context of the project partners.

Content

This grid comprises 4 axes: professional skills, management skills, personal skills and social skills. Professional skills refer to business skills that are specific to the role of Data Steward. Management skills are cross-functional skills that are also important in the role of a Data Steward. Personal skills are abilities that Data Stewards should possess, and which relate to the way they work. Social skills come into play when Data Stewards interact with other people. The 5 columns of the grid are as follows: reference no., data lifecycle stage, skill/ability, Bloom's level, definition, CAS teaching. The reference no. makes it easier to refer to a skill/ability. For certain business skills, we have added a column to specify the stage of the data lifecycle (adapted from FORS, 2023) to which they relate. The "skill/ability" column contains the short name of the skill or ability. "Bloom's level" uses a generic verb to describe the cognitive level according to this taxonomy. The definition column specifies what is expected of the skill. This column is not filled in for abilities. Finally, the "CAS teaching" column indicates what, at this stage of the project, could potentially be taught in the CAS.

Link with certification training

The skills and abilities that make up this grid constitute the profile of a Data Steward. However, certification training (Action 2 of the SwissDS-ENV project) will not enable all the skills listed to be acquired, as some skills are contextual and/or strongly subject to changes in research data management practices. Data Stewards will need to adapt their professional skills to their specific environment. Management skills should probably be acquired outside the Data Stewardship certification training. Personal and social abilities will not be taught.

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SwissDS-ENV project : Data Stewardship in units/faculties

Ref.	Data lifecycle step	Skill / Ability	Level according to Bloom's taxonomy	Definition	Teaching in the CAS
CP Professional skills					
CP1		research operations and challenges	Understand	Understand the functioning and challenges of the research process in an institutional context, including policies, organization and strategy. Be familiar with research-related professions and their interaction within an institution.	x
CP2		ethical and deontological issues in research, including informed consent	Analyze	Identify and analyze the ethical and deontological issues inherent in research, focusing on aspects related to the management of research data, including informed consent	x
CP3		institutional context for research (policies, organization, RDM and ORD strategy, related professions)	Get to know	Identify the institutional context of research (policies, organization, RDM and ORD strategy, related professions) in the context of the position	
CP4		research life cycle	Understand	Understand the research life cycle and how it relates to research data management, including in specific contexts	x
CP5	Plan & design	data life cycle	Analyze	Analyze the data lifecycle and its various stages	x
CP6	Plan & design	developing an understanding of the discipline-specific aspects of data management	Apply	Implement strategies to develop an ad-hoc understanding of research data management practices and issues specific to the disciplines concerned	x
CP7	Plan & design	legal issues (protection of personal and/or sensitive data - copyright - user licenses - intellectual property rights)	Apply	Determine which legal issues play a role in data management, in general and at the level of a specific project Advise researchers on how to understand the legal issues surrounding their project's research data	x
CP8	Plan & design	Open Science issues, with a particular focus on Open Research Data	Understand	Understand the challenges of Open Science and Open Research Data and what they mean for research data management	x
CP9	Plan & design	FAIR principles & implementation	Apply	Putting the FAIR Principles into practice by advising researchers on good practice related to these principles and proposing solutions to enable researchers to apply these principles, including making requests for the institution or department to make these tools available	x
CP10	Plan & design	Data Management Plan (use, content quality, corrections, development of disciplinary models, etc.)	Evaluate	Design DMP templates (disciplinary and/or institutional), assist in their use, revise DMPs, etc.	x
CP11	Collect & capture	data re-use assistance	Apply	Advise on researching and reusing existing data	x
CP12	Collect & capture	understanding the practices that contribute to data quality, completeness and consistency	Understand	Understand the practices that contribute to data quality, completeness and consistency	x
CP13	Collect & capture	assistance in setting up a data collection system compatible with best practices in research data management and legal issues	Understand	Help researchers set up a data collection system compatible with good research data management practices and legal issues Advise researchers on the choice of data collection tools	x
CP14	Collaborate & analyse	treatment of sensitive data, data anonymization and de-identification	Apply	Advise researchers on the handling of sensitive data, data anonymization and data de-identification. Advise departments/institutions on the tools to be made available for proper handling of sensitive data, data anonymization and data de-identification	x
CP15	Manage, store & secure	documentation and data organization	Apply	Know, understand and apply best practices for documenting and organizing data	x
CP16	Manage, store & secure	database operation	Understand	Understand how a database works and how it can be used to manage research data	x
CP17	Manage, store & secure	management and storage infrastructures	Get to know	Know the different types of data management and storage infrastructures Advise researchers on the choice of backup infrastructures	x
CP18	Manage, store & secure	data security	Apply	Know the protocols in force in the institution Advise researchers on data security issues	x
CP19	Archive & share	use of standards (formats, metadata schemas, etc.)	Apply	Use current standards in terms of formats and metadata schemas, depending on the discipline.	x
CP20	Archive & share	long-term preservation	Get to know	Be familiar with best practices and the specifics of long-term data preservation (formats, standards, infrastructures, data preparation and selection, etc.).	x
CP21	Archive & share	help in using data repositories for sharing (choosing and using repositories and preparing data)	Understand	Learn about existing deposits, their advantages and disadvantages, when to use them, etc.	x
CP22	Promote for reuse	data valorisation	Apply	Advise researchers on how to make the most of their data, in particular by publishing it for re-use.	x
CP23		communicating the data management policy, explaining the implications and promoting awareness of the issues at stake	Apply	Communicate about data management policy (lab/departmental, institutional, national, etc.), explain its implications and raise awareness of the issues at stake.	x
CG Management skills (methods)					
CG1		project management	Apply	Apply project management principles to Data Steward projects	
CG2		managing a research project	Get to know	Understand the specifics of research project management	x
CG3		change management	Apply	Supporting researchers through change (new MDM culture, new practices, etc.)	
CG4		coordination of research data management needs and requests for a department or institution	Apply	Coordinate research data management needs and requests within a department or institution	
AP Personal abilities					
AP1		willingness to continue training and update knowledge		Willingness to take part in ongoing training and to keep abreast of new developments in the field of research data management	
AP2		affinity with digital technology		Have an affinity and familiarity with digital tools and technologies, possibly those used in research data management	
AP3		versatility, adaptability, flexibility and ability to handle the unexpected		Demonstrate versatility and the ability to adapt to change, be flexible and handle unforeseen situations in the context of research data management	
AP4		organizational and time management skills		Be able to organize tasks efficiently, prioritize activities and manage time effectively	
AP5		ability to work independently		Ability to work independently, making informed decisions and taking responsibility for results	
AP6		curiosity		Demonstrate intellectual curiosity, being open to new ideas and approaches	
AP7		creativity		Be creative in finding innovative solutions and approaches to research data management.	
AP8		meticulousness and precision		Demonstrate meticulousness and precision	
AP9		problem solving		Be able to identify and propose solutions to problems	
AP10		ability to synthesize		Be able to synthesize information	
AS Social abilities					
AS1		taste for transmission and ability to train		Have an interest in transmitting knowledge and skills, as well as the ability to teach and train others in the field of research data management	
AS2		ability to motivate		Be able to motivate researchers and research teams to adopt effective data management practices and comply with established policies and standards	
AS3		sense of service and support		Have a strong sense of service and be prepared to provide active and ongoing support to researchers in their research data management needs	
AS4		ability to persuade		Be able to persuade and influence stakeholders of the importance and benefits of effective research data management	
AS5		ability to work as part of a team, to cooperate		Ability to work effectively as part of a team, fostering collaboration and cooperation with researchers, technicians and other stakeholders	
AS6		communication skills		Excellent communication skills, both written and oral, adapting discourse to the audience (including popularization) and using effective communication techniques	
AS7		ability to listen and empathize		Actively listen to researchers' needs and concerns, demonstrate empathy and be attentive to their expectations and preferences	
AS8		ability to legitimize one's actions in the eyes of researchers		Be able to justify and legitimize your actions and recommendations to researchers, based on solid, relevant arguments	