LIBER 2020 ONLINE

FAIRSFAIR
Fostering Fair Data Practices in Europe

Integrate FAIR Data science competences in higher education curricula:
THE ROLE OF ACADEMIC AND RESEARCH LIBRARIES

23 June 2020
LIBER2020 Online Conference
FAIRsFAIR Stakeholder Workshop

FAIRsFAIR "Fostering FAIR Data Practices in Europe" has received funding from the European Union's Horizon 2020 project call H2020-INFRAEOSC-2018-2020 Grant agreement 831558

FAIRSFAIR
Fostering Fair Data Practices in Europe

AGENDA

14:00 - 14:30

- **Welcome and introduction**

to FAIRsFAIR & the objectives of the workshop, Pedro Principe, University of Minho

- **FAIR in European Higher Education**

A summary of the FAIRsFAIR survey and focus group results, Lennart Stoy, EUA

14:00 - 14:30

- **Use cases**

FAIR data education and training initiatives in HEI

Input from the LIBER WG on Digital Skills for Library Staff & Researchers.

- Cécile Swiatek, Co-Chair LIBER WG on Digital Skills for Library Staff and Researchers
- Couperin.org (France), Romain Féret
- EPFL Library, Lausanne (Switzerland), Mathilde Panes and Eliane Blumer
- Open Science Platform (Poland), Natalia Guenpeter
- University Turku Library (Finland), Päivi Kanerva

15:00 - 16:00

- **Plenary discussion**

- Main elements of the **role of research and academic libraries** on supporting FAIR data education and training

- Key **elements of an institutional strategy** towards the integration of FAIR Data competences in curricula

- Common **gaps and challenges** for developing an action plan for FAIR Data competences in HE curricula

- **Wrap-up and take home messages**

Bregt Saenen, EUA, Pedro Principe, UMinho, Cécile Swiatek, LIBER WG

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Fostering Fair Data Practices in Europe

FOSTERING FAIR DATA PRACTICES IN EUROPE

FAIRsFAIR project in a nutshell

Time plan: 36 months
- Start: March 1, 2019
- 22 partners from 8 MS
- 6 core partners: DANS (project coordinator), CSC, DCC, Trust-IT, STFC, EUA

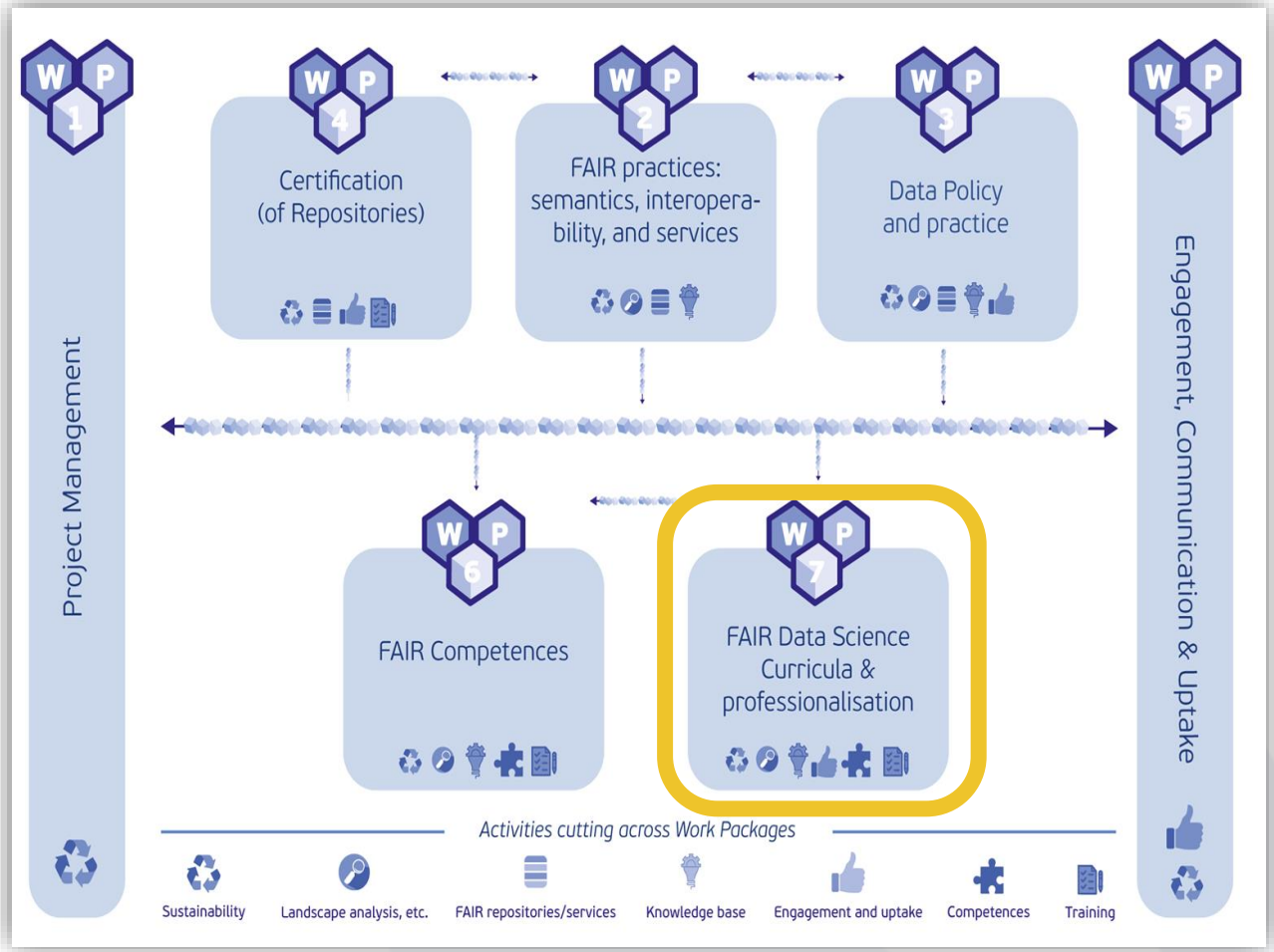
FAIRSFAIR IN ACTION

- IMPROVE INTEROPERABILITY OF FAIR RESOURCES
- INCREASE PRODUCTION AND USE OF FAIR DATA
- BUILD A NETWORK OF TRUSTED DIGITAL REPOSITORIES
- SET UP A FAIR COMPETENCE CENTRE FOR ALL COMMUNITIES
- DEVELOP A CAPABILITY MATURITY MODEL TOWARDS FAIR CERTIFICATION
- EMBED FAIR DATA EDUCATION IN UNIVERSITY PROGRAMMES
- ORGANISE AN OPEN CALL FOR REPOSITORIES TO GET SUPPORT FOR CERTIFICATION

FAIRsFAIR workplan

FAIR Data Science & professionalisation

- ✓ Map the integration of FAIR data principles in data science and other disciplines' curricula and **analyse the landscape of available FAIR data trainings** in Europe.
- ✓ Deliver a **FAIR data competence framework** for higher education and professionals to support the development of a FAIR data culture and the uptake of FAIR data principles.
- ✓ Translate the competence framework into **model curricula and university courses** for different disciplines and professional profiles (e.g. data stewards)
- ✓ Support **embedding FAIR data education in university programmes and doctoral training** through a series of workshops.



https://www.fairsfair.eu/the-project

FAIRSFAIR

Fostering Fair Data Practices in Europe

FAIR and RDM skills in Higher Education

LIBER2020 Online Conference
23 June 2020

Lennart Stoy, EUA – on behalf of FAIRsFAIR WP7

FAIRsFAIR "Fostering FAIR Data Practices in Europe" has received funding from the European Union's Horizon 2020 project call H2020-INFRAEOSC-2018-2020 Grant agreement 831558

Overall project aims

- ’FAIRsFAIR addresses the development and concrete realisation of an overall knowledge infrastructure on academic quality data management, procedures, standards, metrics and related matters based on the FAIR data principles’.
- The objective is to accelerate the realization of the goals of the EOSC by opening up and sharing all knowledge, expertise, guidelines, implementations, new trajectories, courses and education on FAIR matters.
- Implementation of recommendations from the EOSC HLEG and the Expert Group on FAIR Data.

Skills for Open Science are widely seen as a bottleneck

EOSC Declaration	▪ "necessary skills and education in research data management, data stewardship and data science should be provided throughout the EU as part of higher education"
High Level Expert Group on the EOSC	▪ "build a workforce able to execute the vision of the EOSC by ensuring data stewards, data and infrastructure technologists and scientific data experts who are trained and supported adequately"
European Open Science Policy Platform (OSPP)	▪ "skill development in the area of Information Technology (IT) and data literacy should be supported at all levels, from the primary school up to policy makers". ▪ "foster Open Science literacy as essential to European competitiveness at the global level, together with other digital and information competencies"
Turning FAIR into Reality	▪ "coordinate and accelerate the pedagogy for professional data roles" ▪ "data skills, including an appropriate foundational level in data science and data stewardship, in undergraduate and postgraduate training across disciplines".
New Skills Agenda for Europe and the Digital Education Action Plan	▪ Open Science skills "from data management to legal aspects, including technical skills, such as data stewardship, data protection, scholarly communication and dissemination" have been included as a priority line of action.
Recommendation on access to and preservation of scientific information	▪ "set and implement clear policies [...] for the necessary skills and competences of researchers and personnel of academic institutions regarding scientific information".
EOSC Skills & Training Working Group	▪ "Digital and Open Science skills are a cornerstone in EOSC's operations and future. Developing and sustaining the skills of researchers, research support staff, and EOSC service providers is essential for the success of the EOSC vision"

Challenges

- No real knowledge how widespread teaching RDM and FAIR is at universities, in particular as part of formal education.
- No real view of the plans and challenges of the sector to increase teaching RDM and FAIR.
- No real knowledge about the needs of the sector at large and the best approaches to support it.

Survey structure

Is FAIR data and RDM part of university curricula?

What is the status of FAIR data and RDM policies at universities?

How is EOSC perceived by universities?

How are universities offering support for FAIR data and RDM?

https://doi.org/10.5281/zenodo.3629683

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Leading questions

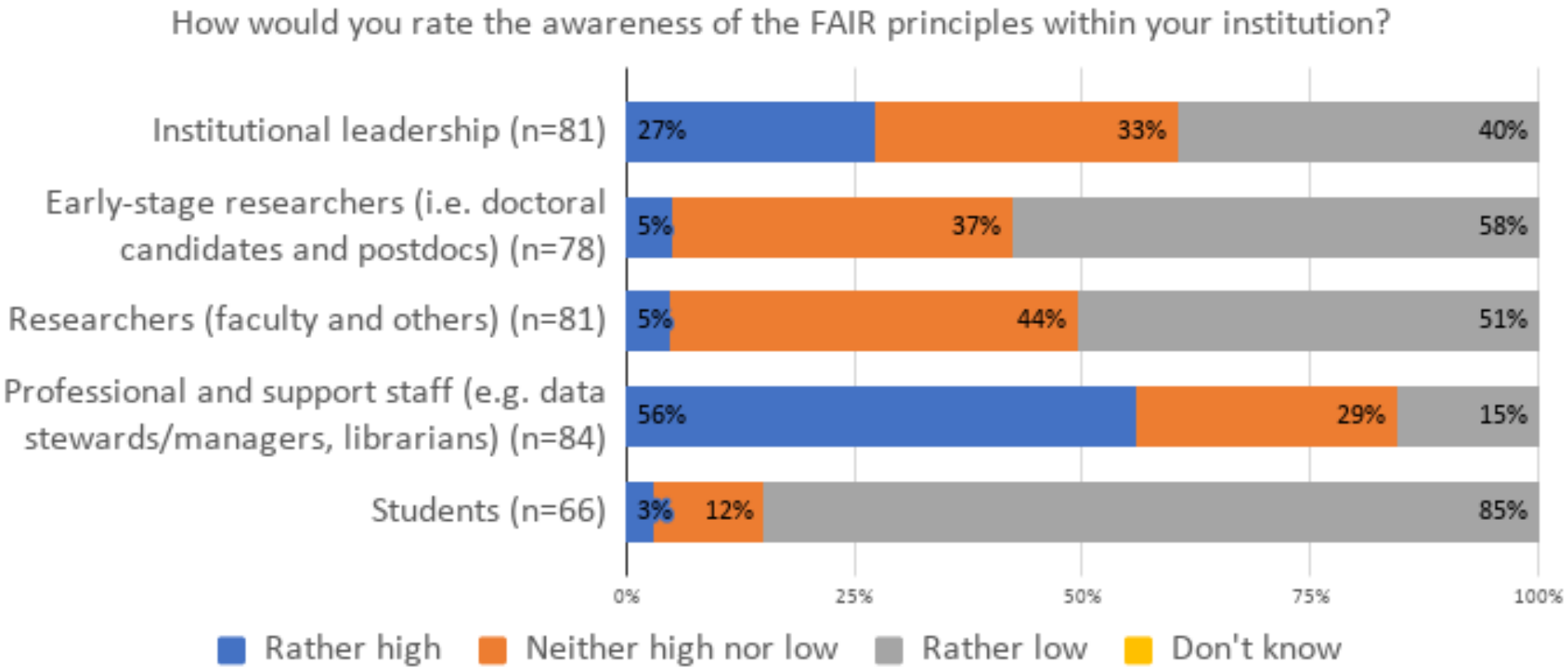
1. Is there an overall, institutional strategy for digital skills?
2. Are there differences (of RDM/FAIR teaching) across domains and educational levels?
3. What types of skills are taught?
4. What resources are used?
5. What types of skills should be taught more widely?
6. What can FAIRsFAIR do to support institutions?

Sample overview

- 90 respondents from 24 countries in Europe and beyond
- Largely comprehensive universities (63%) followed by technical universities (17%)
- Mainly institutions with more than 1000 researchers (53%), equal number of institutions with 500-1000 researchers (21%) or 100-499 (20%)
- Supported by two focus groups in October and November 2019 at University Carlos III of Madrid and the University of Amsterdam

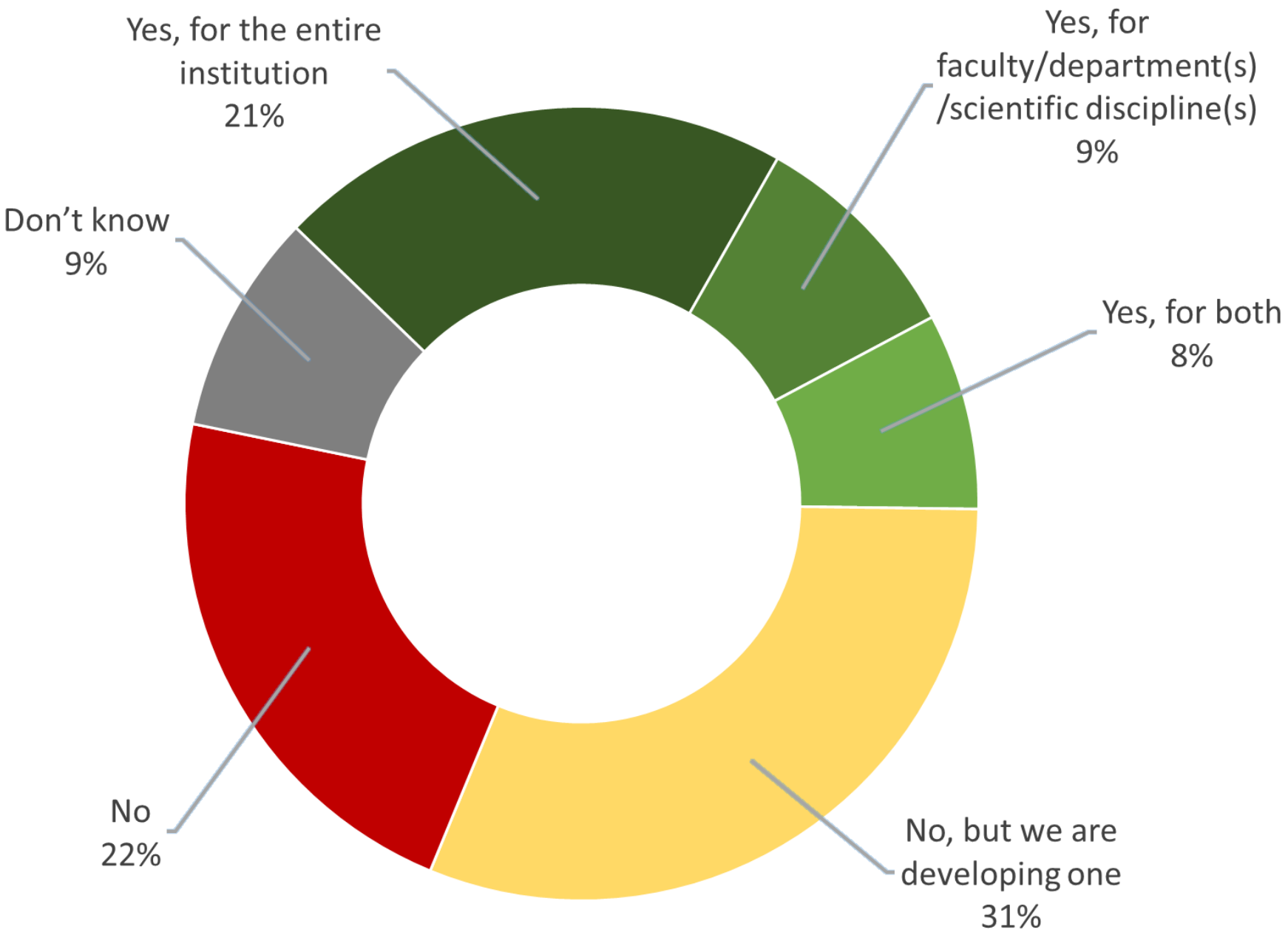
How aware are universities of the FAIR principles?

We asked respondents to rate the awareness of the FAIR principles of different groups within the university.



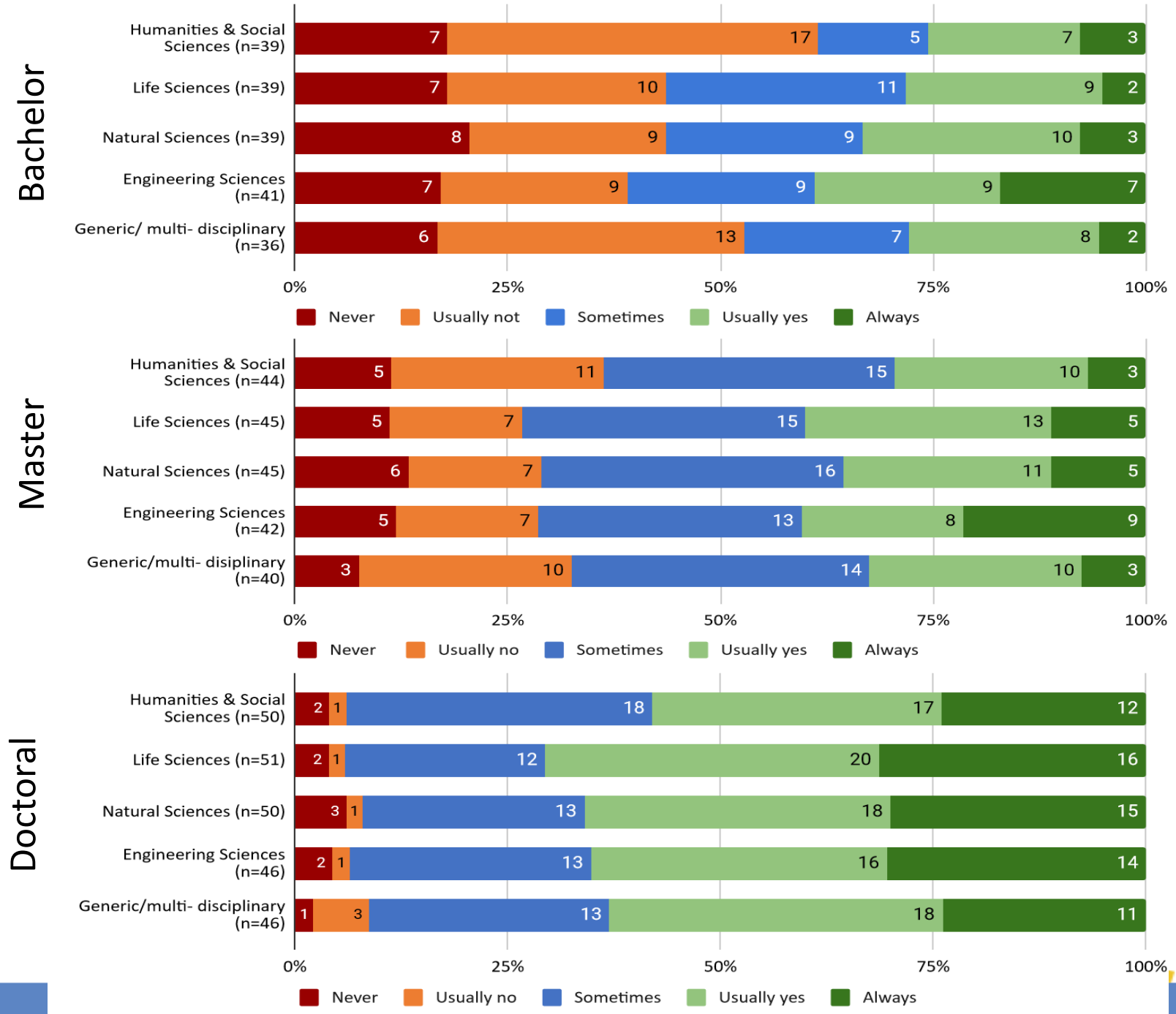
Is there an overall institutional strategy for digital skills?

N=77



Are there differences across domains and educational levels?

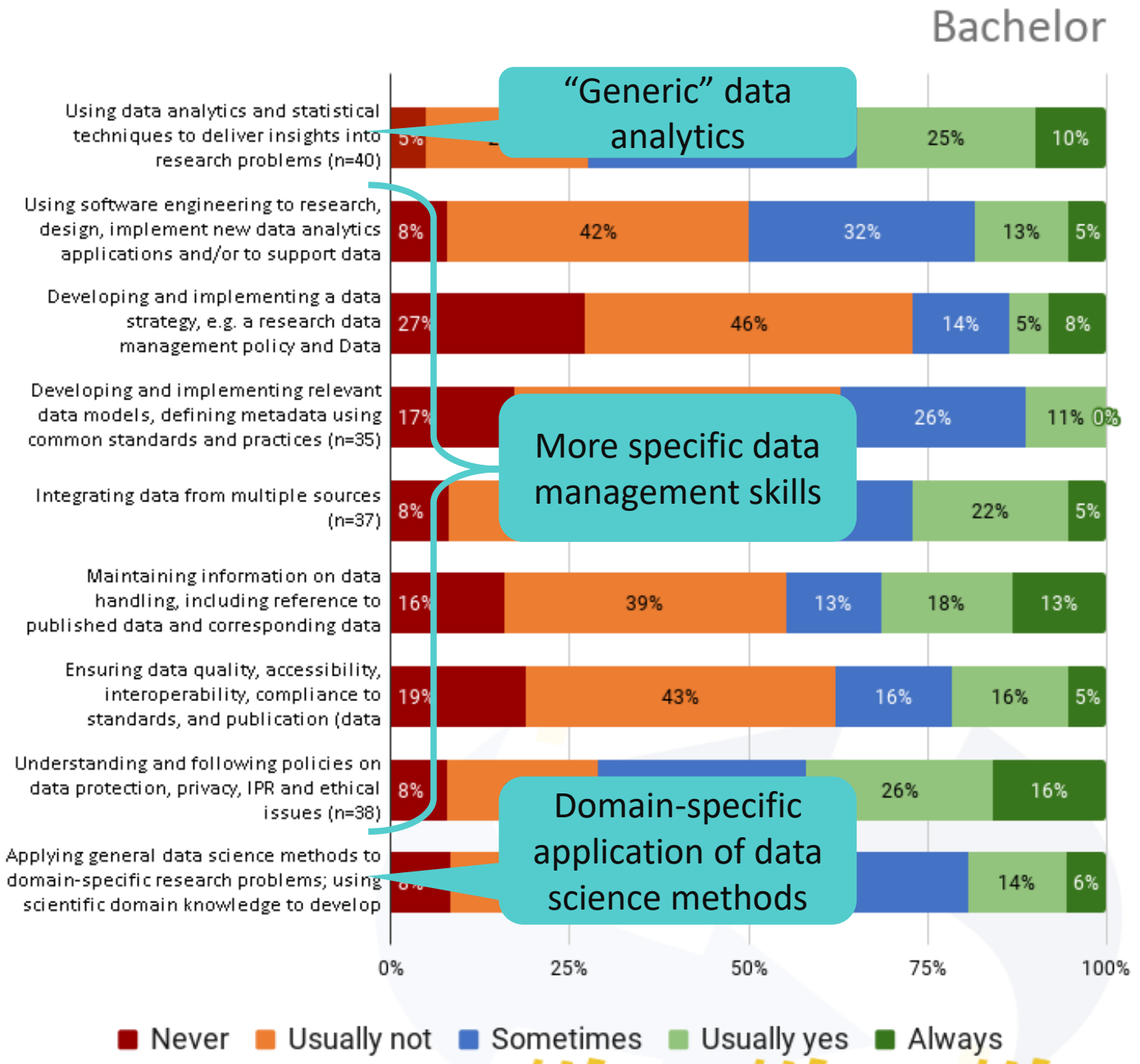
Respondents were asked to indicate whether any data science skills were addressed at bachelor, master or doctoral level in five different domains.



What types of skills are taught?

Respondents were asked to indicate what extent specific skills were currently being delivered at their institution at bachelor, master and doctoral level on a scale from “never” to “always”.

Definitions taken from EDISON project.



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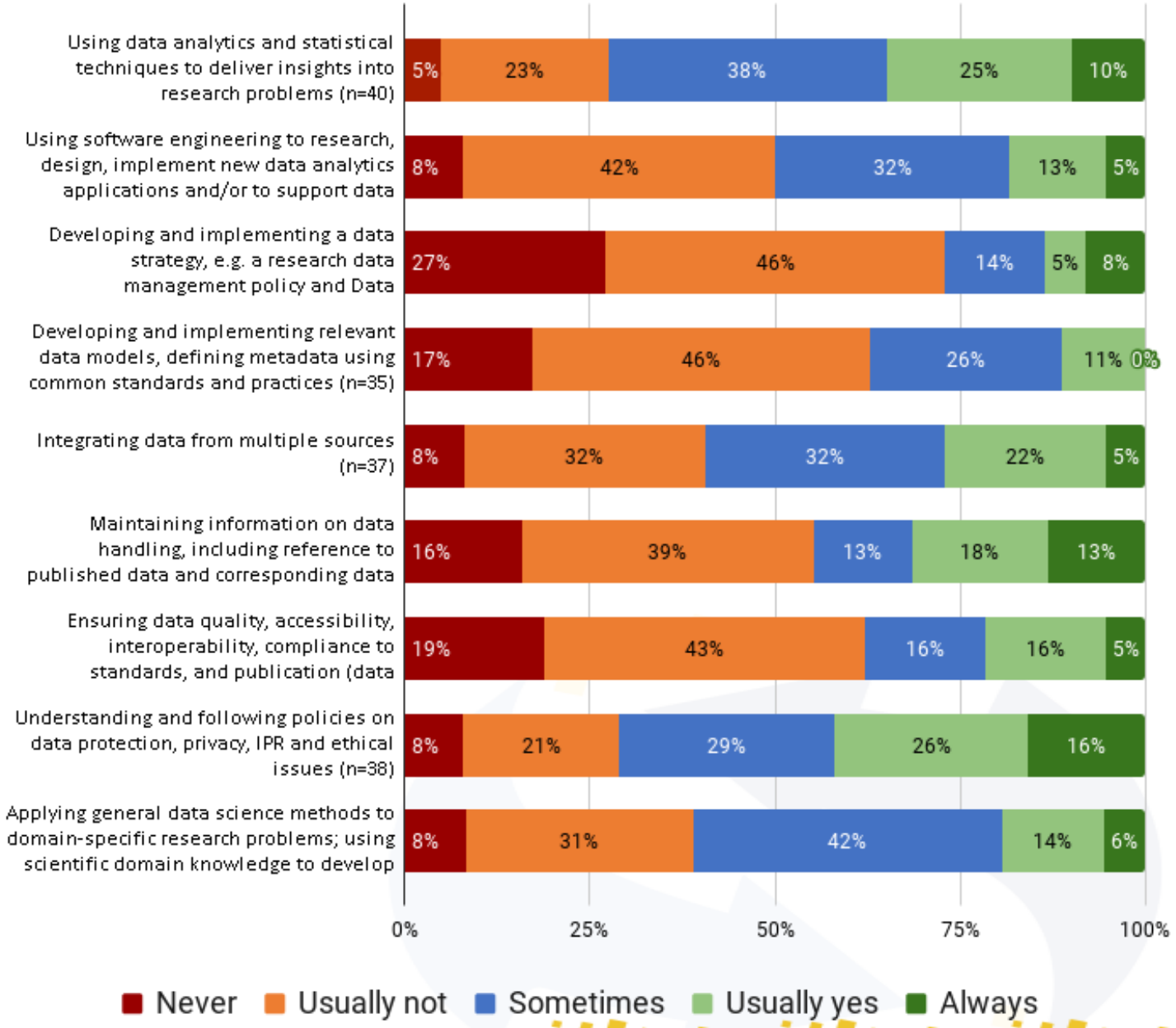

Doctoral

What types of skills are taught?

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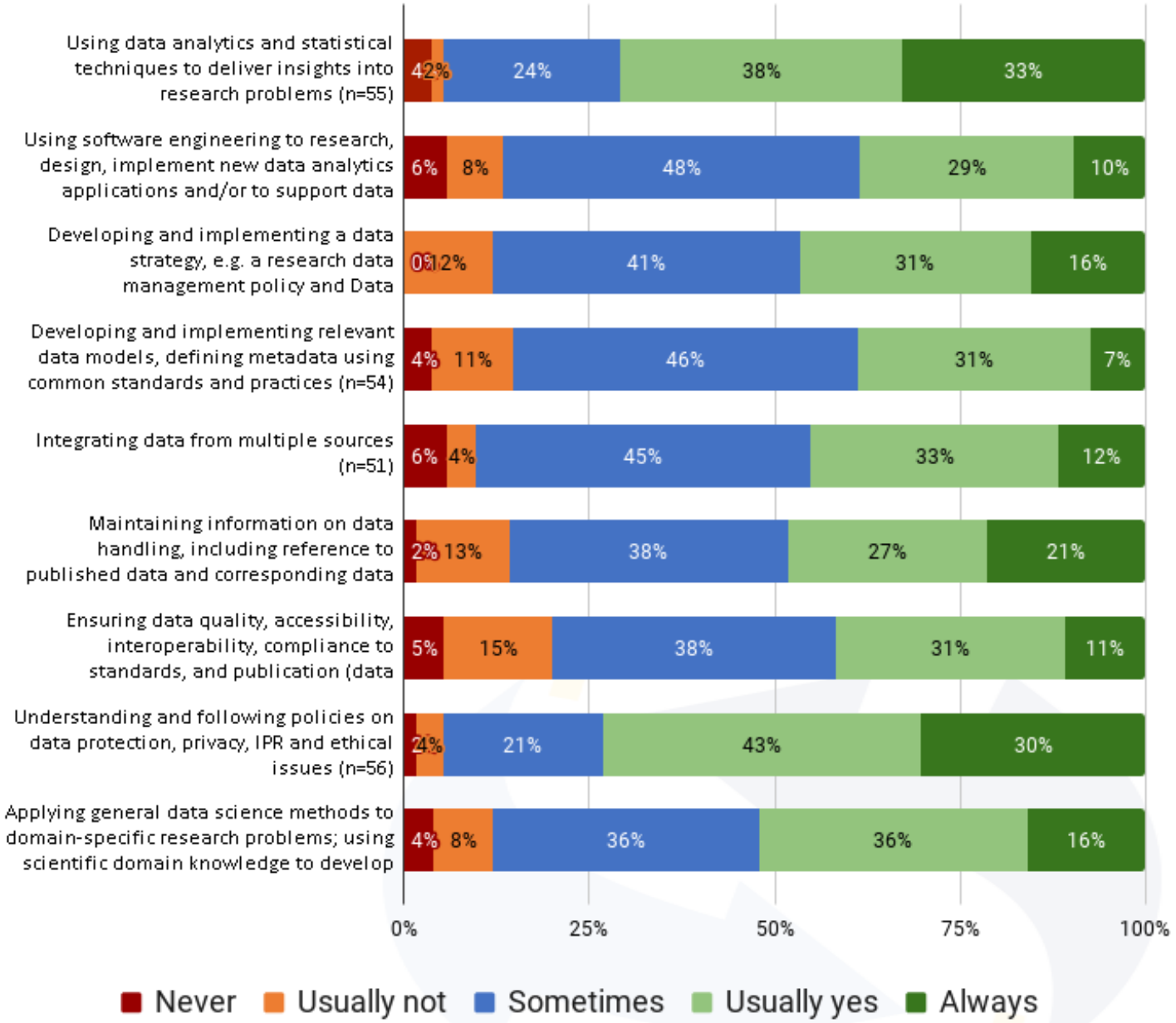
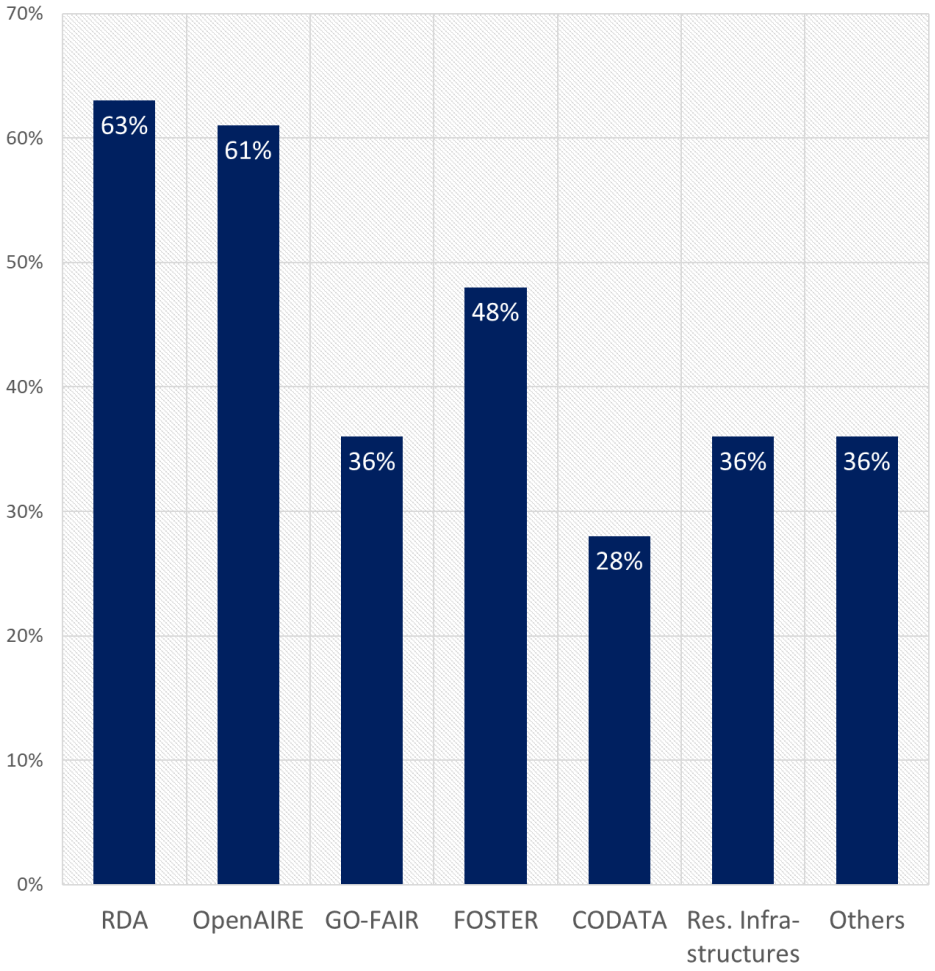
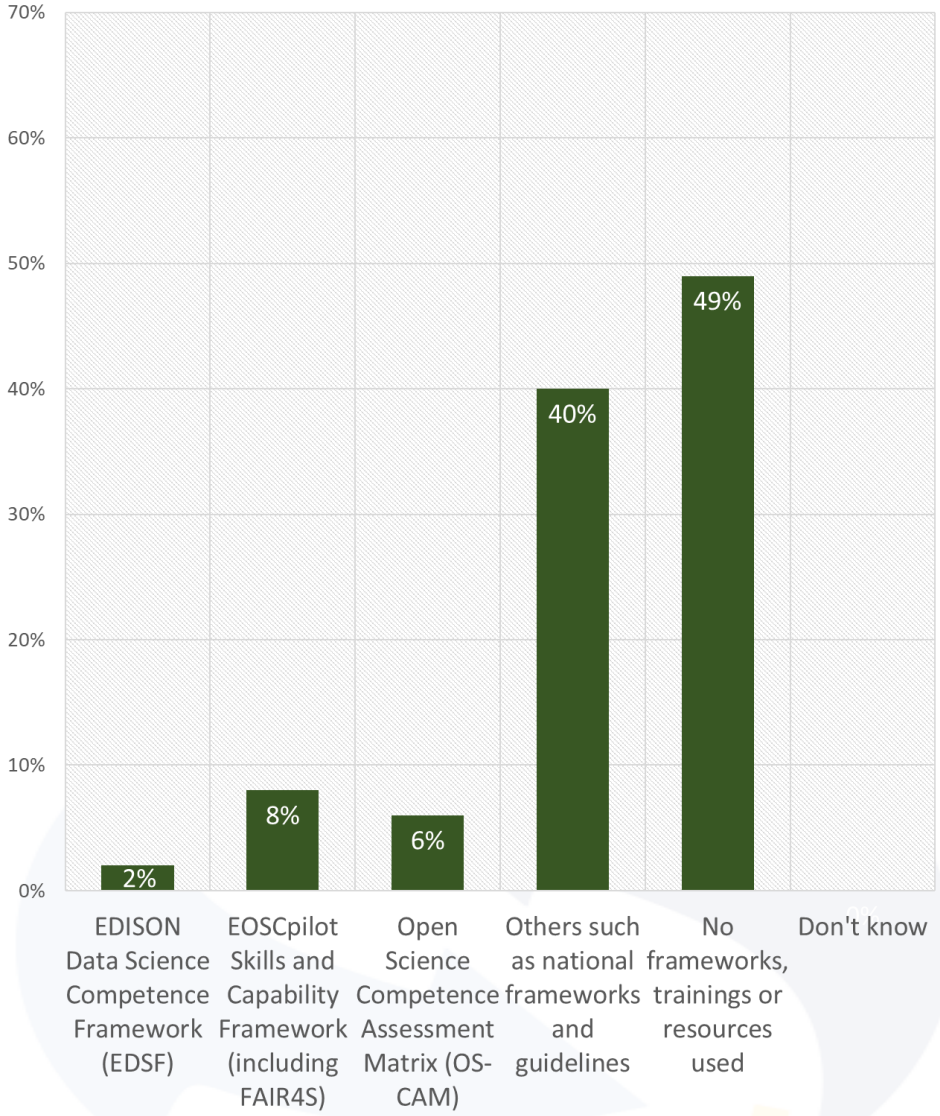


What resources are used?

Is your institution using resources, trainings or other services from other projects or initiatives? (n=64)

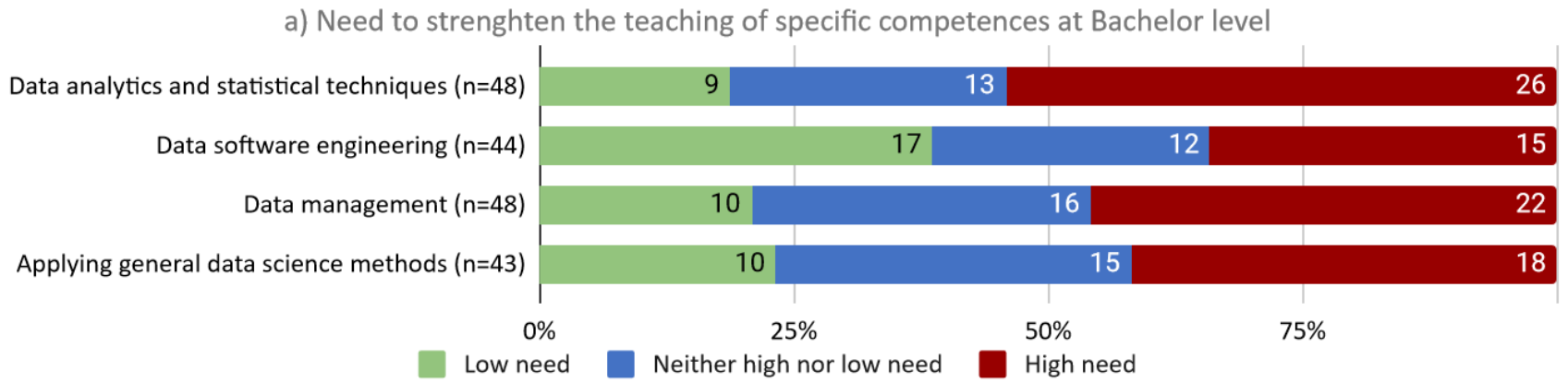


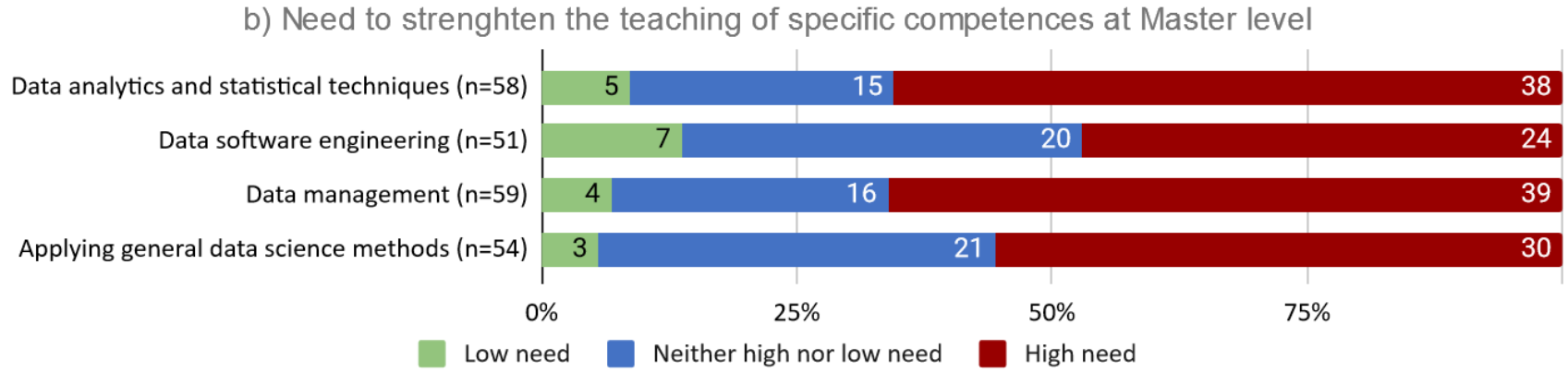
Is your institution using specific frameworks for RDM, data science and open science when developing training activities or curricula? (n=53)

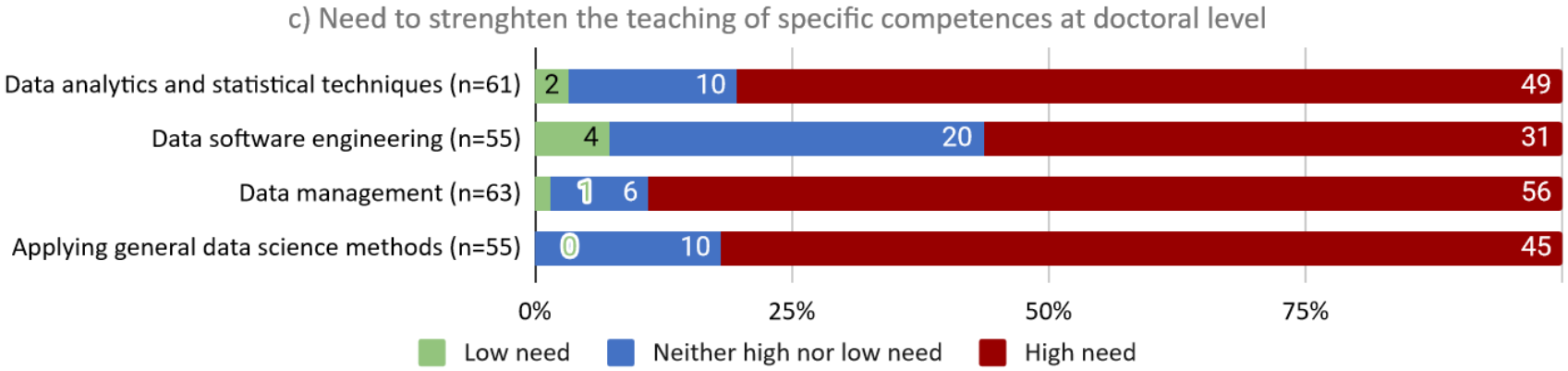


What types of skills should be taught more widely?

Respondents were asked to indicate if their institutions believe there is a need to strengthen the teaching of specific research data-related competences at the bachelor, master or doctoral level.







The role of libraries

- Libraries support the implementation of RDM policies at 70% of responding HEIs and are involved in policy development at 30%.
- Libraries often raise awareness, organise training and host the staff and infrastructure for RDM.
- But how do we 'transfer' the experience of existing RDM activities and integrate them in a more structured way into curricula, especially in the 1st and 2nd cycle?
  - Is it more training of trainers?
  - Is it about making FAIR/RDM a staple in research methods or integrity training?
  - Is there a minimum knowledge of FAIR/RDM that every student should be eposed to?

Main recommendations

Link institutional digital skills strategies to with data-related skills and competencies throughout an HEIs educational portfolio.

FAIR and RDM should be advocated in a larger context of research methods, open science and research integrity.

Increase the coverage of data analytics and RDM topics in teaching at all levels.

Higher need in SSH contexts to develop RDM practices and standards, also in order to address them in educational programmes.

Develop practical guidance on the application of the FAIR principles in different domains and disciplines, and related skills and competences,

Sources

Stoy, Lennart, Saenen, Bregt, Davidson, Joy, Engelhardt, Claudia, & Gaillard, Vinciane. (2020). *D7.1 FAIR in European Higher Education* (Version v1.0_draft). https://doi.org/10.5281/zenodo.3629683

Stoy, Lennart, Saenen, Bregt, Davidson, Joy, & Engelhardt, Claudia. (2020). *Data for D7.1 FAIR in European Higher Education* (Version 1.0) [Data set]. http://doi.org/10.5281/zenodo.3629687

Contact

Lennart Stoy, Work Package Coordinator,
European University Association (EUA)
Lennart.stoy@eua.eu

FAIRSFAIR

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Thank you for your attention!

Lennart Stoy, lennart.stoy@eua.eu

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#RDAplenary14

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Open Science training methods and practices across European Research Libraries

Cécile SWIATEK, Co-chair
LIBER Working Group on Digital Skills for library staff and researchers

Tuesday June 23rd

LIBER Open science skills

OPEN SCIENCE SKILL DEVELOPMENT INITIATIVES IN EUROPE

LIBER Survey Analysis

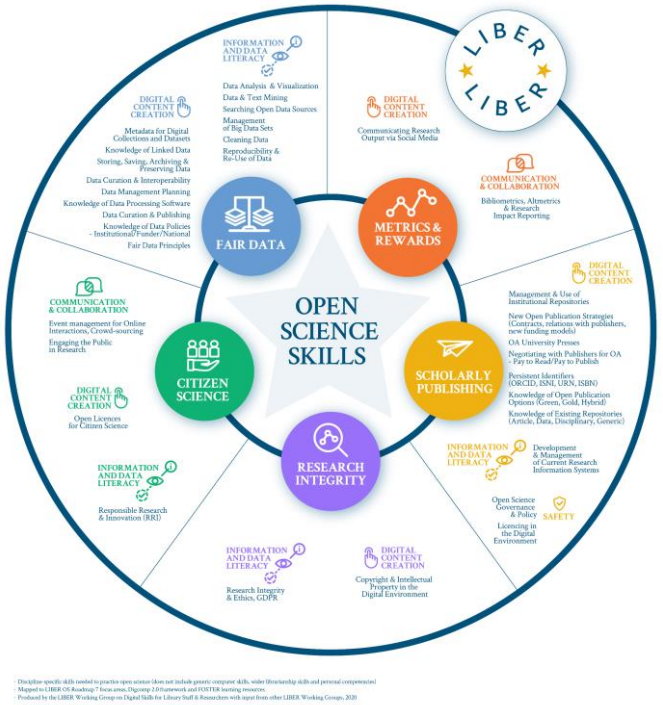
LIBER survey 10.5281/zenodo.3903141

Case reviews and questionnaire
https://doi.org/10.5281/zenodo.3251730

Open Science Training Case Studies

Austria	*Hungary*	*Romania*
Belgium	*Ireland*	*Spain*
Denmark	*Italy*	*The Netherlands*
Estonia	*Latvia*	*Switzerland*
Finland	*Luxembourg*	*United Kingdom*
France	*Norway*	
Germany	*Poland*	

Open science skills



LIBER visualisation diagram
https://doi.org/10.5281/zenodo.3702400

Digital skills useful references https://www.zotero.org/groups/2340674/liber_digital_skills_for_open_science/library

couperin.org

Consortium Unifié des Etablissements Universitaires et de Recherche pour l'Accès aux Publications Numériques

MANAGE RESEARCH PROJECTS WITH OPEN SCIENCE

Develop specific guidance, training and support for project coordinators and consortia

Liber, June 2020

DOI: 10.5281/zenodo.3876984

Romain Féret

GTSO-Couperin, University of Lille

Research project management

What is it?

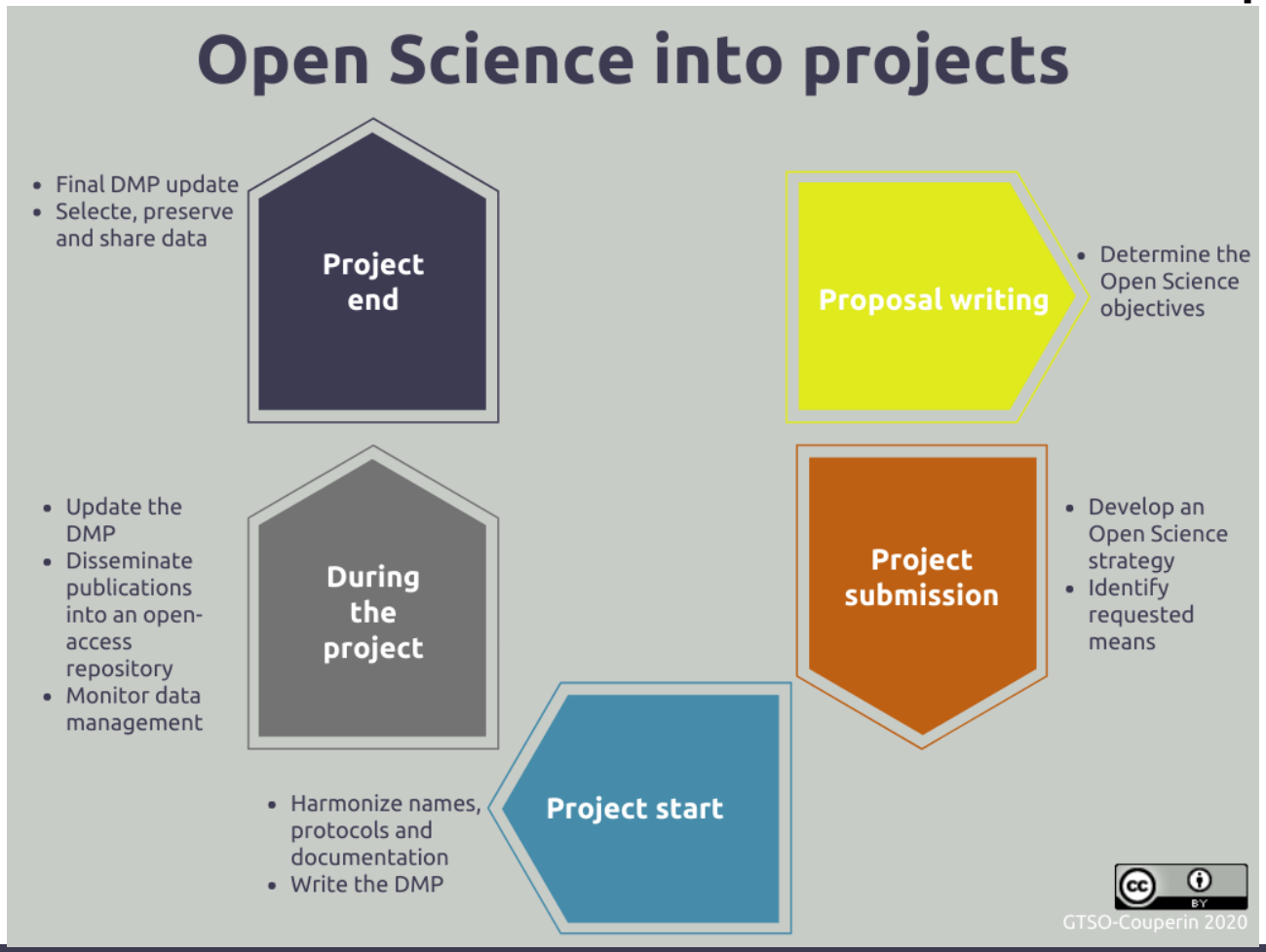
- Coordinate a team or a consortium
- Writing a grant proposal then managing an on-going project
- Think research in terms of: work packages, tasks and deliverables

Why develop specific support for research projects?

- Reaching from 5 to over 50 researchers at a time
- Funders requirements are a good motivation
- A middle-term approach: 3 to 7 years
- OS skills must be part of a CV
- OS trainings can be planned as a deliverable

Many funders expect projects to be an opportunity for researchers **to skill up**

Open Science: from submission to final report



https://commons.wikimedia.org/wiki/File:Open_Science_into_projects.png

Support project coordinators at applying for grants

How to support coordinators in writing their proposals

- Guide: Improving your ANR project thanks to Open Science, 10.5281/zenodo.3769971 (summary: 10.5281/zenodo.3773762)

How to include Open Science in a grant application

- **Work plan**: transform Open Science good practices into tasks and deliverables
- **Participants**: identify existing Open Science skills (consortia and support services)
- **Budget**: request for the missing means to do appropriate Open Science
- **Impact**: define an ambitious and realistic Open Science Dissemination strategy

Support on-going projects

How to support coordinators and consortia

- Support DMP writing, but not only
- Provide guidance (toolkit for projects: 10.5281/zenodo/3381779)
- Take part to meetings
- Inform and train on research data management

One size does not fit all

- Coordinator and scientific leaders: they are the one who decide the strategy
- Research teams (PhD, postdoctoral researchers…): they are the one who actually handle the data

Project management: new perspectives for libraries

Develop the role of the library

- **Connect** with other research projects support services: grant office, IT, DPO…
- Make your expertise recognized **at all steps of projects**, including the application process
- Provide **training sessions** and **individual support** for projects
- Support **both coordinators and consortia**

Use case: University of Lille (France)

Support ANR and H2020 projects

- Individual support: 40 projects in 2019 (28 at application stage)
- Training for project coordinators in 2020:
  - Including Open Science into its grant application, 24 projects
  - Comply with Open Access requirements (*ongoing*), 30 projects
  - Comply with Research Data management requirements, 15 projects

H2020-COFUND: **PEARL** (2020-2023)

- Doctoral program
- Develop and broaden the research skills, including Open Science
- Train PhD students and supervisors

Thank you for your attention

Contact:

GTSO-Données: gtso_donnees@couperin.org #GTSO

Romain Féret: romain.feret@univ-lille.fr

Improving your ANR project thanks to Open Science, 2020, 10.5281/zenodo.3769971

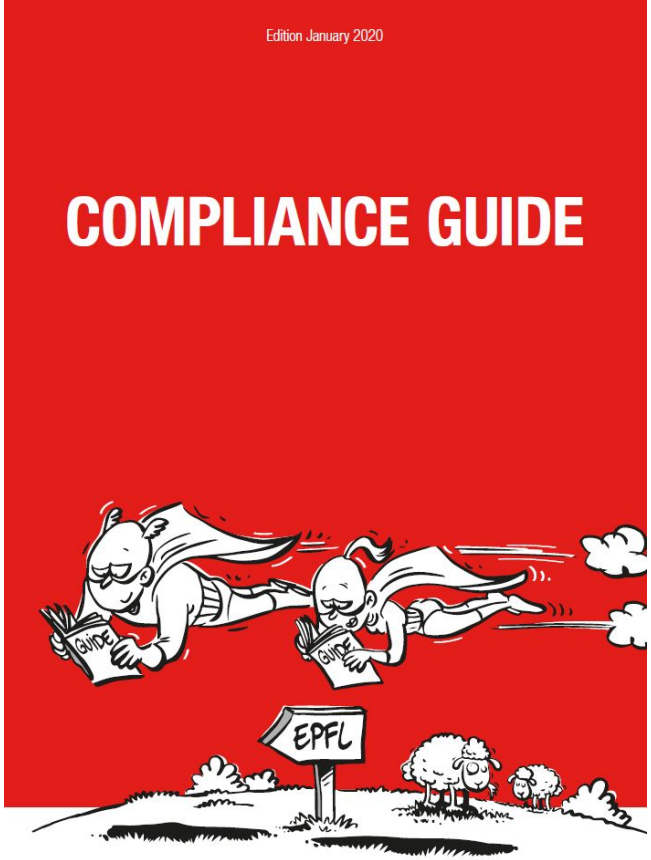
Institutional strategy towards the integration of FAIR Data competences

Institutionally, RDM good practices are mentioned in the institution's compliance guide, but not FAIR

FAIR is advertised in other ways, by us : trainings, presentations, data champion initiative, promotional videos

Not a centralized curriculum: all trainings are available on a voluntary basis, only one is subject to ECTS.

Participation in a project on the swiss-level : EasyFAIR



EPFL

Gaps and challenges for developing an action plan for FAIR Data competences

Library courses are considered “too transversal” for the doctoral school, **difficult** to get support to be included in the ***credited*** curriculum.

Currently **missing technical infrastructure**, such as a dedicated data repository which might enforce the importance of FAIR-data

Currently **not enough** institutional **incentives**

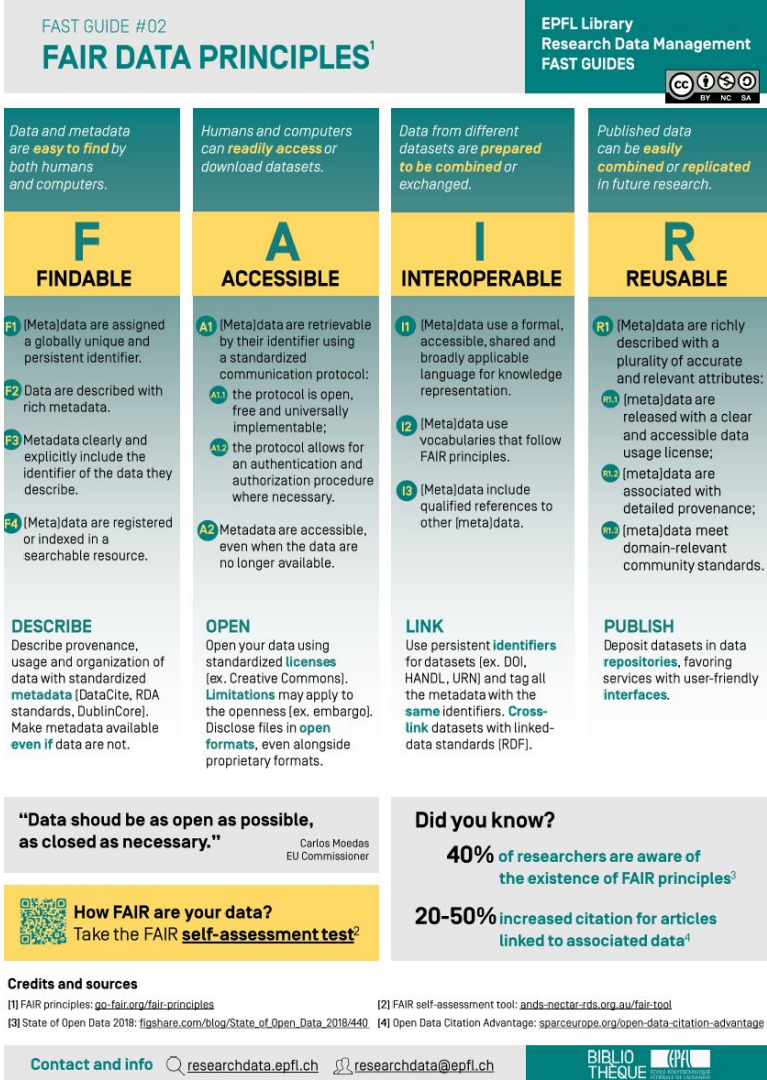
EPFL

Gaps and challenges for developing an action plan for FAIR Data competences

Lack of entry-level disciplinary training offer that would be more inclusive, also for graduate level

The set of skills required to master FAIR principles is very wide: technical + managerial + “disciplinary” + documentary

Perceived as another administrative task by most



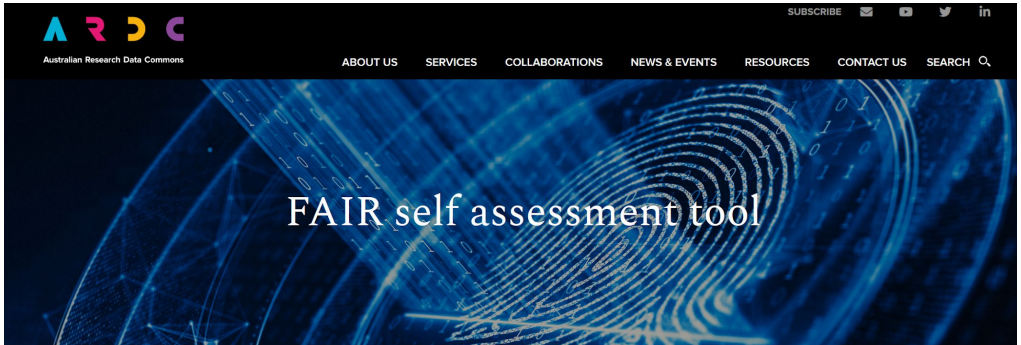
Role of research and academic libraries on supporting FAIR data education and training

Role of sensitization for the FAIR principles in general

Currently more a role of coordinators, experts, facilitators, trainers, “resource-at-your-hand” than certifying competences of participants

Future: develop a way to assess these competences, as librarians

https://ardc.edu.au/resources/working-with-data/fair-data/fair-self-assessment-tool/



EPFL Library : some resources about FAIR

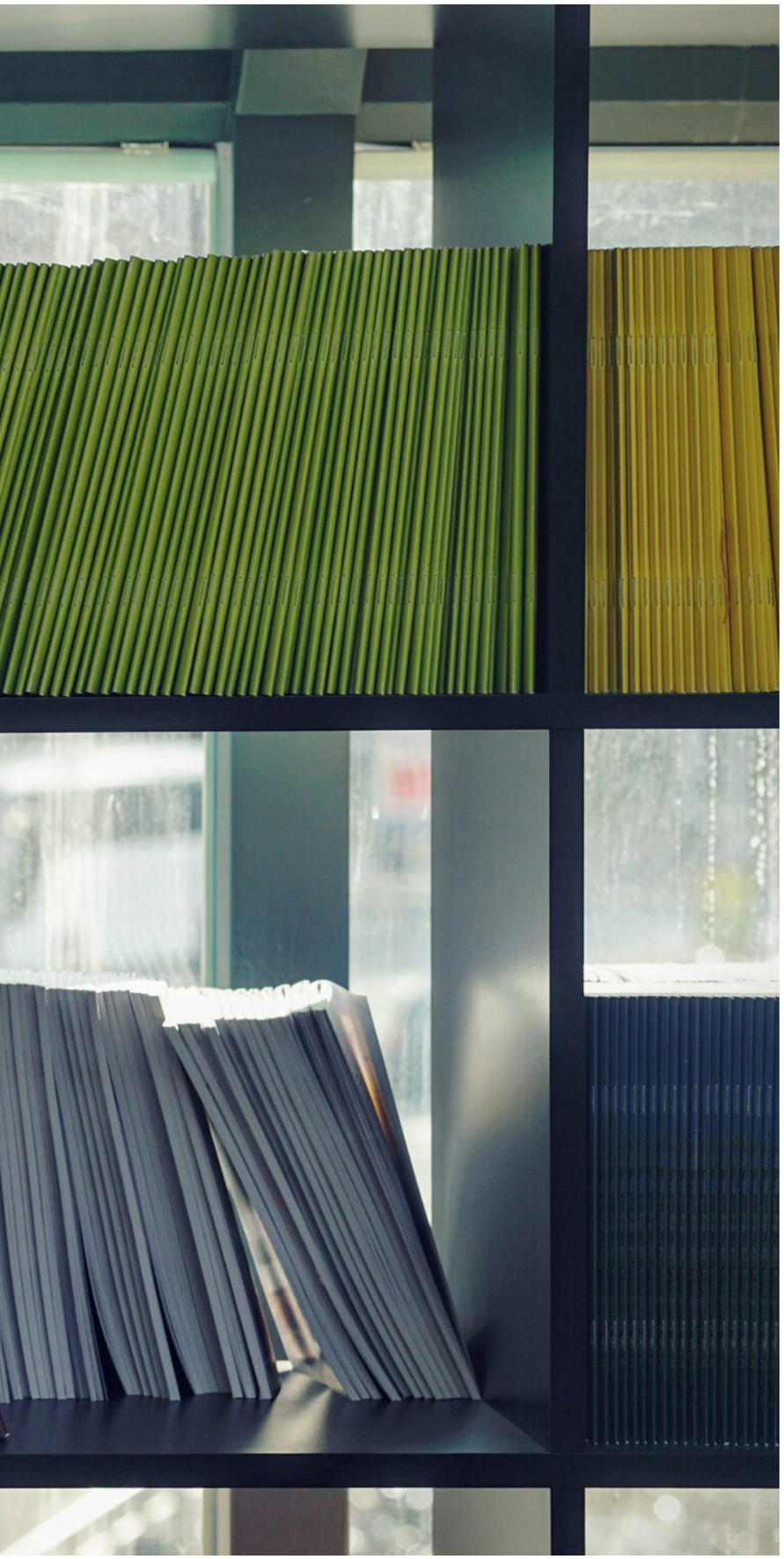
Trainings : Code and data management, Optimize your research data management, the Power of Metadata, Software Carpentry @ EPFL, all EPFL library trainings

Event: Love Data Week (youtube videos)

Community: Data Champions

Tools : DMP Template, Cost calculator, Fast guides

EPFL



Promoting FAIR data in Poland. Lessons learned from a training (Open Science Platform)

Natalia Gruenpeter
Interdisciplinary Centre for Mathematical and Computational Modelling
University of Warsaw

LIBER conference workshop
Contribution to the FAIRsFAIR online workshop
June 23, 2020

Our perspective

Framework:

- Open Science Platform, an initiative run by Interdisciplinary Centre for Mathematical and Computational Modeling, University of Warsaw
  - ➡ OpenAIRE, National Open Access Desk
  - ➡ project Dziedzinowe Repozytoria Otwartych Danych Badawczych (Disciplinary Repositories for Open Data), drodb.icm.edu.pl

RepOD
Repository for Open Data

- fields of activity
  - ➡ open science infrastructure
  - ➡ open science training
  - ➡ open science expertise
  - ➡ promoting open science

    otwartanauka.pl | Twitter

2019:
15 face-to-face workshops
~ 250 participant

2020:
5 online trainings
~ 250 participant

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OpenAIRE

Landscape: open science in Poland

Ministry of Science and Higher Education

- 2015, an initial document that lays a foundation for a future national open access policy (recommendations)

Research performing organizations

- increasing number of institutions developing and implementing open access mandates

National Science Centre

- a government funding agency, set up to support basic research in Poland,
- 2018-2020 - steps towards adopting open access policy
  - cOAlition S member
  - mandatory data management plans, https://ncn.gov.pl/sites/default/files/pliki/regulaminy/wytyczne_zarzadzanie_danymi_ang.pdf
  - introducing an Open Access Policy; https://www.ncn.gov.pl/aktualnosci/2020-06-03-wprowadzenie-polityki-otwartego-dostepu?language=en

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PLATFORMA OTWARTEJ NAUKI

OpenAIRE

Lessons learned

- discussions with researchers, librarians and research support staff
- questions during the training
- feedback received after the training

Main elements of the role of research and academic libraries on supporting FAIR data education and training

WHAT?

Provide information on FAIR principles

- creating awareness
- showing FAIR as spectrum / continuum

WHY?

Promote FAIR data

- show bigger picture
- show benefits of FAIR data

- e.g. international OS initiatives, declarations, open access policies and strategies
- data discoverability, data citation

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OpenAIRE

Lessons learned

HOW?

DMP consulting and training

Providing information on infrastructure and services

- explaining how specific decisions affect the FAIRness of data, FAIR self-assessment tool
- show benefits of DMP for the research process/project
- emphasis on what can be achieved simply by choosing a right repository / what needs more attention, action (providing researchers with competencies and skills)

Further work:

- institutional context
- discipline-specific aspects

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OpenAIRE

Whispering words of information – Data librarians in an academic world

Case University of Turku

Päivi Kanerva, University of Turku, Library

UNIVERSITY OF TURKU

Organisational background

- Based on the recommendations and national policies given by the Open Science National Coordination in Finland (https://avointiede.fi/en), each research organization should have its own open science policy
- University of Turku has policies about open data, publications and open research https://www.utu.fi/en/research/open-science/open-science-at-the-university-of-turku
- Roles and actions for research support services are defined in an action plan for the University of Turku data policy

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The roleof the library

- The Data policy gives our library a role to help and support, teach and guide university researchers and staff in order to manage data in a FAIR way
- Our role is to
  - Know the whole concept of making data FAIR in general
  - Raise awareness of and encourage researchers to aim high in data management practices
  - Work as a coordinating partner between different University academic specialists (library, IT, legal, ethics, data protection) in order to produce practical guidance for researchers and staff.

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Librarians in action

- Reviewing data management plans: Giving hints and guiding researchers to the right source of information

- Planning different kinds of data management lectures/guidance

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Course: Basics of Research Data Management

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HEALTH SCIENCES	SURVEYS	INTERVIEWS	NATURAL SCIENCES	Responsible
Introductory Lecture				
Research plan: - Commenting - Describing the research data - Supplements	Research plan: - Commenting - Describing the research data - Supplements	Research plan: - Commenting - Describing the research data - Supplements	Research plan: - Commenting - Describing the research data - Supplements	Lectors and university teachers
Data management plan (DMP)	Data management plan (DMP)	Data management plan (DMP)	Data management plan (DMP)	Library
IPR rights issues, permits and licences	IPR rights issues, permits and licences	IPR rights issues, permits and licences	IPR rights issues, permits and licences	Legal affairs, CRC, library
Privacy notice and risk analysis -				Data Protection Officer
RedCap (building form based database)	RedCap (building survey form)	NVIVO (organizing data)	RedCap (building form based database, electronic laboratory tools)	Biostatistician, lector
Data storage, protection, processing, describing and IT Service solutions				IT Services
Data preservation, sharing and citing (national citation standard). General and discipline specific open data repositories				Library, IT Services
DMP Workshop		DMP Workshop		

About the course

- Article: https://docs.lib.purdue.edu/iatul/2019/fair/5/
- Course information and teachers: https://zenodo.org/record/3692225#.XuDO6dOP5KI
- Learning objectives: https://zenodo.org/record/3889895#.XuJf-UUzbBx

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THANK YOU!

Päivi Kanerva / paivi.kanerva@utu.fi

FAIRSFAIR
Fostering Fair Data Practices in Europe

AGENDA

14:00 - 14:30

- **Welcome and introduction**

to FAIRsFAIR & the objectives of the workshop, Pedro Principe, University of Minho

- **FAIR in European Higher Education**

A summary of the FAIRsFAIR survey and focus group results, Lennart Stoy, EUA

14:00 - 14:30

- **Use cases**

FAIR data education and training initiatives in HEI

Input from the LIBER WG on Digital Skills for Library Staff & Researchers.

- Cécile Swiatek, Co-Chair LIBER WG on Digital Skills for Library Staff and Researchers
- Couperin.org (France), Romain Féret
- EPFL Library, Lausanne (Switzerland), Mathilde Panes and Eliane Blumer
- Open Science Platform (Poland), Natalia Guenpeter
- University Turku Library (Finland), Päivi Kanerva

15:00 - 16:00

- **Plenary discussion**

- Main elements of the **role of research and academic libraries** on supporting FAIR data education and training

- Key **elements of an institutional strategy** towards the integration of FAIR Data competences in curricula

- Common **gaps and challenges** for developing an action plan for FAIR Data competences in HE curricula

- **Wrap-up and take home messages**

Bregt Saenen, EUA, Pedro Principe, UMinho, Cécile Swiatek, LIBER WG

LIBER 2020 ONLINE

FAIRSFAIR
Fostering Fair Data Practices in Europe

Integrate FAIR Data science competences in higher education curricula:
THE ROLE OF ACADEMIC AND RESEARCH LIBRARIES

23 June 2020
LIBER2020 Online Conference
FAIRsFAIR Stakeholder Workshop

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