

Closing the Skills Gap:

The Basics of RESEARCH DATA MANAGEMENT

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**UNIVERSITY
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In This Presentation

- * Introduction
- * Aim and Methods
- * Results
- * The Basics of Research Data Management Course
- * Conclusions

INTRODUCTION

Research Data Management (RDM)

// The methodical handling of the information produced or re-used during the course of academic research. **//**

(The University of Edinburgh. (2019, May 10). Why research data management? Information Services, Research data service. Retrieved from: <https://www.ed.ac.uk/information-services/research-support/research-data-service/research-data-management>.



Targeted skills

High quality research requires
high quality data


Open Science principles

Data Policy

Present skills

The Implications of the Good RDM

- * Help you increase the impact of your research
- * Help to get professionally distinguished
- * Makes it possible to reuse, share and open data
- * More efficient use of time
- * Help to succeed in working life



(e.g. Carlson & Johnston 2015; Finnish Social Science Data Archive 2017)

The Role of the Library

- * Research Data as an information source
- * Support in planning RDM
- * Sharing good practices
- * Advanced roles: help to get closed data sets into use, license, fix, visualize data sets, etc.



(e.g. Carlson 2011;
Calzada Prado & Ángel Marzal 2013;
Mannheimer, Serman & Borda 2016;
Federer 2016).

* Co-operation!

AIM AND METHODS

The Aim of the Study (Part 1)

- * To find out the importance of RDM skills and doctoral students' competencies as ranked by doctoral students and faculty members
- * To plan and implement RDM training for doctoral students
- * To evaluate the implementation of the first RDM training

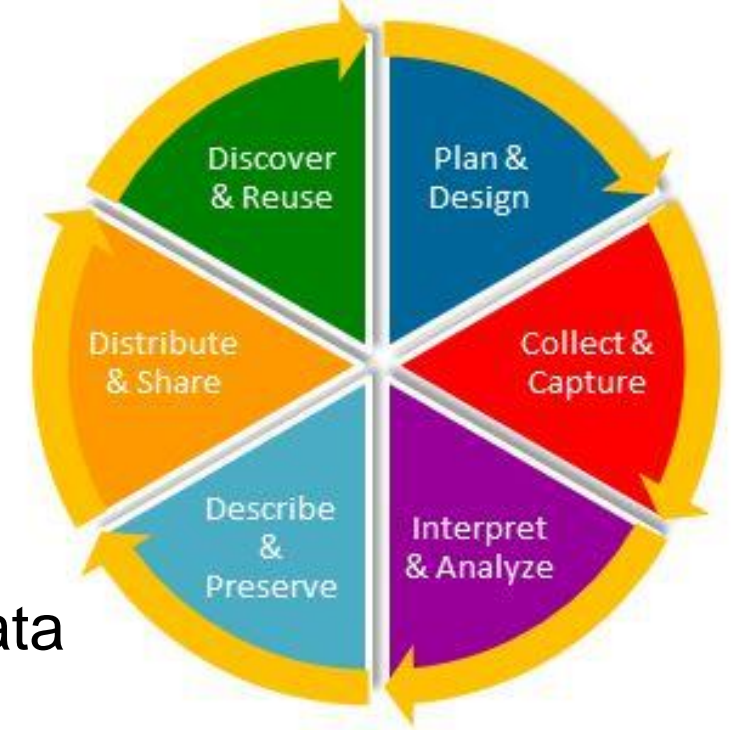
➡ Focus on quantitative results (Likert scale)

Methods

- * Introducing the project, aim and methods to
the faculty deans
to UTU Graduate School Management Board
- * Semi-structured interviews
Themes from Data Information Literacy Toolkit (Carlson, Sapp
Nelson, Bracke, Wright 2012)
34 interviewees: faculty members and students
Both open-ended and closed questions
2 hours reserved for interviews
Interview form built in Webropol-database
- * Pre and post survey
The participants of the BRDM course fill the survey
RDM's importance and competencies

Contents of the Interview

- * Collected data and it's life cycle in the project
- * Agreements and licences
- * Version management, backup and storing of the data
- * Processing, analysing and visualising
- * Organising, documenting, describing, quality management
- * Discovering and using external data
- * IPR rights management and data protection
- * Discipline specific cultures and practices
- * Preservation, reuse and sharing
- * Educational needs



The Data Lifecycle, adapted from the Research 360 Project

(Carlson, Sapp
Nelson, Bracke,
Wright 2012)

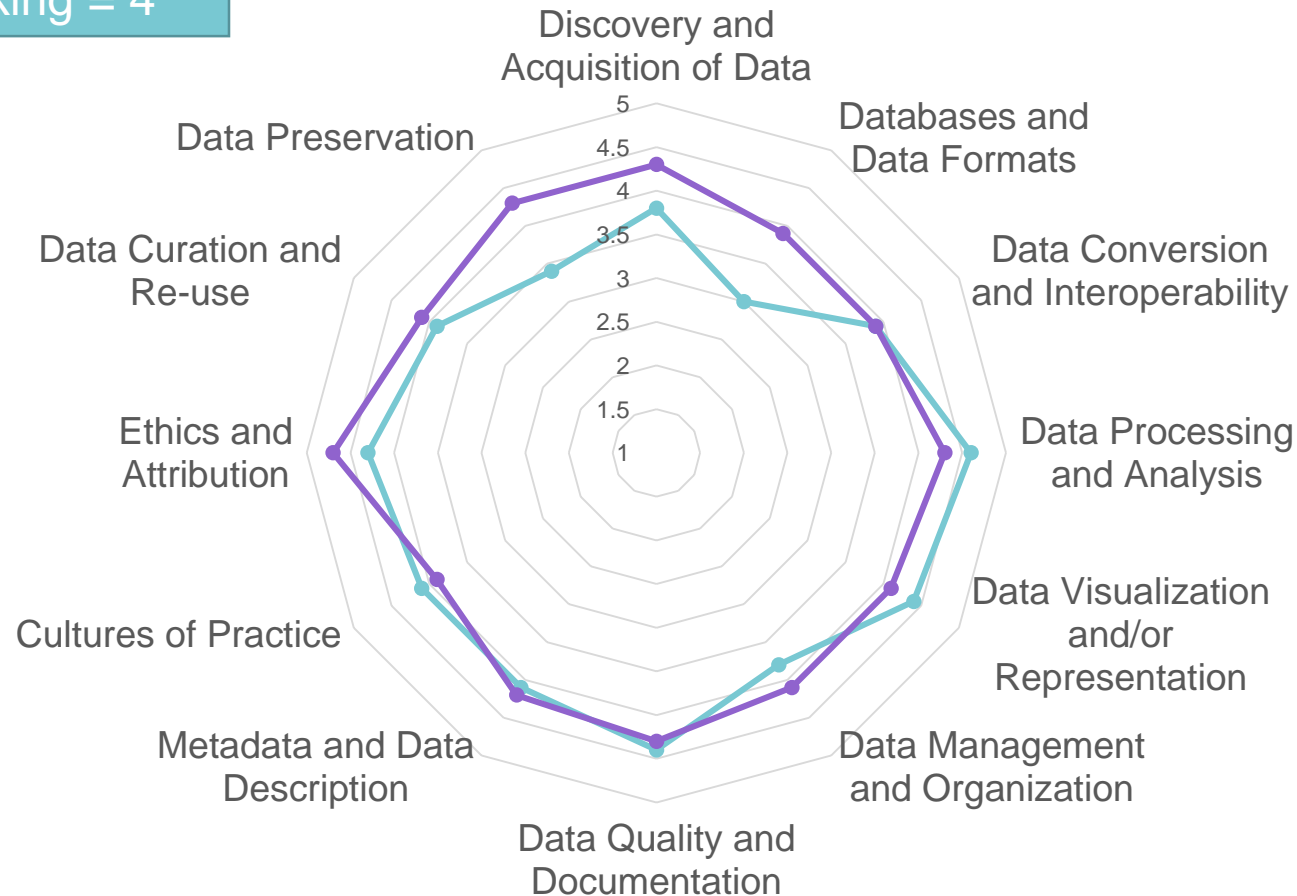
RESULTS

Importance: Faculty Members Vs. Doctoral Students

Faculty members'
average ranking = 4

— Faculty member — Doctoral Students

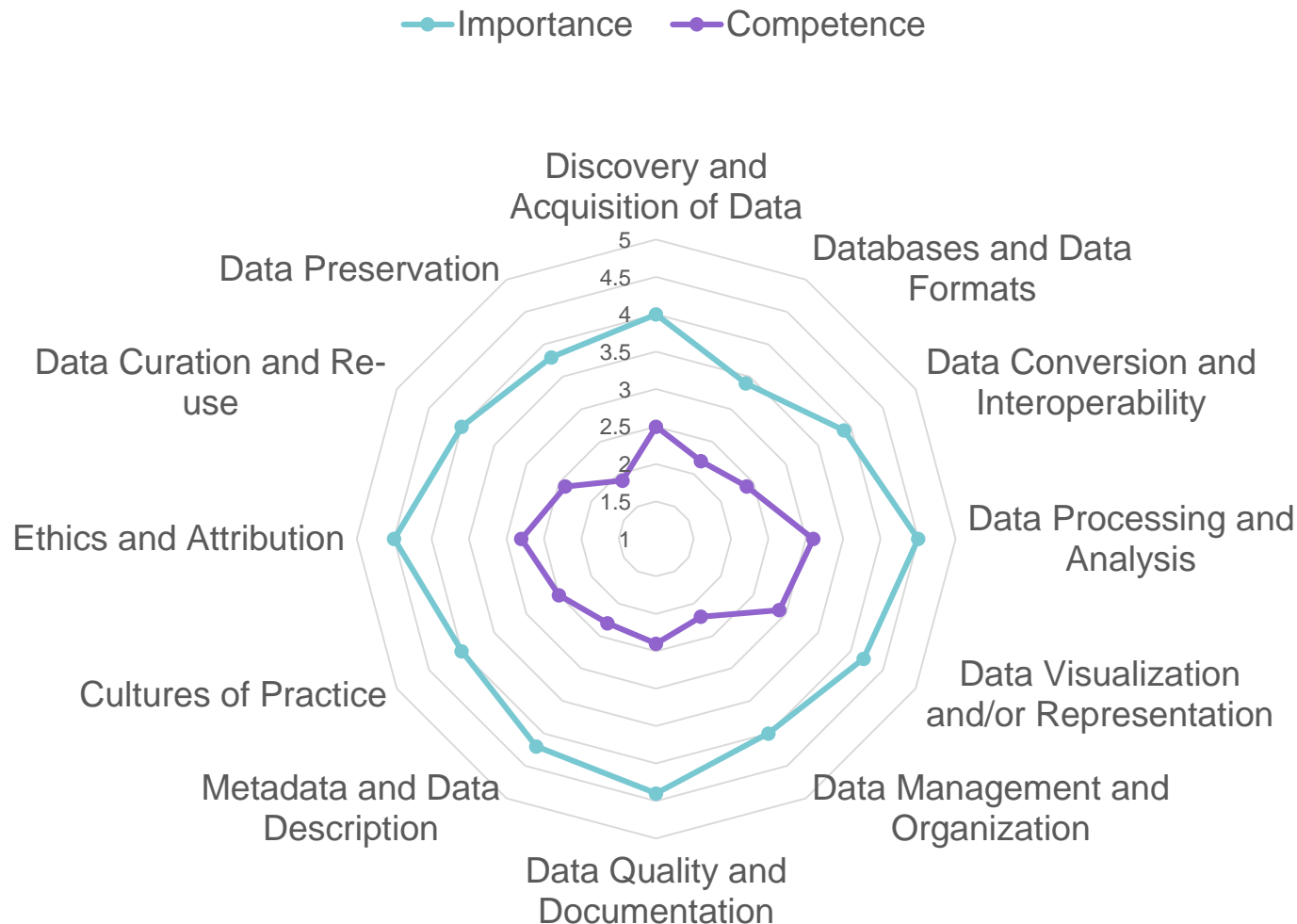
Doctoral students'
average ranking = 4,2



Three most important:

- 1) Ethics and attribution 4,5
- 2) Data processing and analysis 4,5
- 3) Data quality and documentation 4,4

Importance Vs. Competence



All interviewees' average ranking for importance = 4,1

All interviewees' average ranking for doctoral students' competence = 2,5

Best competencies in:

- 1) Data processing and analysis 3,1
- 2) Data visualization and representation 2,9
- 3) Ethics and attribution 2,8

The Basics of the
RESEARCH
DATA
MANAGEMENT
Course

Background Information of the Training

* UTUGS

* 3 credits

7 x 4 hours, including workshops and lectures

* Teachers from many disciplines and professions
teacher-researchers, lawyers, IT-specialists,
biostatisticians, specialists from library, etc.

* Three Study Programmes:

Health sciences

Surveys and interviews

Natural sciences

HEALTH SCIENCES	SURVEYS AND INTERVIEWS	NATURAL SCIENCES	Responsibility
Research plan: <ul style="list-style-type: none"> - Commenting - Describing the research data - Supplements 	Research plan: <ul style="list-style-type: none"> - Commenting - Describing the research data - Supplements 	Research plan: <ul style="list-style-type: none"> - Commenting - Describing the research data - Supplements 	Lectors and University Teachers
IPR rights issues, permits and licences	IPR rights issues, permits and licences	IPR rights issues, permits and licences	Legal Affairs, CRC, Library
Data management plan (DMP)	Data management plan (DMP)	Data management plan (DMP)	Library
Privacy notice and risk analysis -			Data Protection Officer, Head of IT Services for Researchers
RedCap (building form based database)	RedCap (building survey form)	RedCap (building form based database, electronic laboratory tools)	Biostatistician
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

Module Based Feedback

**I learned the impact of
GDPR on data privacy**

**In the future, I
hope it would be
possible for each
to make their own
research plan and
DMP**

**I will begin to plan
my data
management in the
beginning of a
research project**

**I learned the
importance of
agreements, permits
and IPR**

CONCLUSIONS

Key Findings

- * The Gap between targeted and present RDM skills throughout the research data life cycle
- * RDM's importance ranked 4,1 (very important), competencies 2,5 (have somewhat competencies)
- * The BRDM is the first formal RDM training trying to cover most of the generic research data life cycle stages at the University of Turku
- * Close collaboration with researchers and research support services makes you succeed!

What Next?

- * Quantitative and qualitative analysis to find out doctoral students'
 - * RDM principles and practices,
 - * present and needed competencies at the University of Turku.
- * Plan, implement and evaluate RDM training
- * Next implementation 2020 together with the Åbo Akademi, the Swedish speaking university in Turku
- * Long term objective: RDM training path covering undergraduate, graduate and post-doc phases

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Thank you!

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