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Introductions
What we’ll be doing today
● Setting the scene
● Who is your audience?
● Identify their training needs
● Identify learning objectives
● Explore different formats
● Design and evaluate your own mini-training
● Troubleshooting
This is not an Open Science Training!
What IS Open Science?
What is your role as trainer?
Why do you want to give Open Science Training?
Who is your audience?
How can you reach them most effectively?
Go to www.menti.com and use the code 35 23 6

Open Science Training
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Training examples & practical guidance
Open Science Training Handbook

What is it?

Why is it important?

Learning objectives to achieve

Key components: Knowledge & skills

Questions, obstacles, & common misconceptions

Further resources

book.fosteropenscience.eu
On Learning and Training

How to

• **Prepare** your workshop
  • Theoretical learning strategies
  • Different audiences
  • Strategies to develop motivation

• **Execute** your workshop
  • How to design a course
  • How to choose content
  • How to start training

• **& reflect** on your workshop
  • Aspects to evaluate

Organisational Aspects

• Venue
• Timing & budget
• Equipment & media
• Marketing & advertising strategy
• Registration
• Evaluation
→ Check list
Example training outlines

• 24 exercises:
  • Format, time needed, topic, learning objectives, description, materials needed, level of prior knowledge, how to adapt

• Open Science Café
  • Enable low-threshold discussion and dialogue between different stakeholders

www.fosteropenscience.eu/content/organise-your-own-open-science-cafe

CC BY Martine Oudenhoven
Open Science Basics

- Open Concepts & Principles
- Open Research Data & Materials
- Open Access to Published Research Results
- Open Research Software & Open Source
- Open Education Resources
- Open Peer Review, Metrics & Evaluation
- Open Licensing & File Formats
- Reproducible Research & Data Analysis

book.fosteropenscience.eu
D3.2 - Recommendations on Open Science Training

https://zenodo.org/record/1341023#W9hkzfZoR1o
Hands-on & interactive
Homo Ludens: Man is playful
Homo Ludens: Man is playful
Homo Ludens: Man is playful
Homo Ludens: Man is playful
Homo Ludens: Man is playful
Share your experiences!
Group discussion:

What was the best training you attended?
What was the worst training you attended?

→ What did all of them have in common?
→ What parts of it were predictable?
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Open Elements in your training
Finding open materials and understanding what you can and cannot do with them
<table>
<thead>
<tr>
<th>Copyright</th>
<th>Public Domain</th>
<th>Open License</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default</td>
<td>No known rights</td>
<td>Rights covered by copyright are still</td>
</tr>
<tr>
<td>No action required by author</td>
<td>Rights can expire (e.g. 70 years after</td>
<td>applicable</td>
</tr>
<tr>
<td>Different thresholds and duration periods</td>
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<td>The license states conditions for reuse, no</td>
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<td>the start</td>
<td>additional permissions needed</td>
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<td>Different per jurisdiction</td>
<td>Not respecting</td>
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<td>copyright</td>
<td>No permission needed</td>
<td>conditions of license is a copyright</td>
</tr>
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<td>Limitations and exceptions allow some forms</td>
<td>All types of reuse are allowed</td>
<td>infringement</td>
</tr>
<tr>
<td>of fair use (no additional permission needed)</td>
<td></td>
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</tr>
</tbody>
</table>
50 shades of OPEN
https://ccsearch.creativecommons.org

Search

I want something that I can... use for commercial purposes. modify, adapt, or build upon.

kitten

PHOTO INFO
Title
Kitten
Creator
Berit Watkin
License
CC BY 2.0
Source
Flickr
Dimensions
1365 X 1501 pixels

PHOTO ATTRIBUTION
"Kitten" by Berit Watkin is licensed under CC BY 2.0

Copy to HTML Copy to Text
A stray kitten in Rizal Park, Manila

Stray cats seem to be common place in many Asian countries. Unregulated and left to their own devices strays can be found all over the place in the most unlikely places. This tiny cat was in the middle of Rizal Park in the heart of Manila on a late Saturday evening with thousands of people around. Its mother was no where in sight.

https://commons.wikimedia.org
# Reusable Courses

<table>
<thead>
<tr>
<th>What is Open Science?</th>
<th>Best Practice in Open Research</th>
<th>Open Access Publishing</th>
<th>Open Peer Review</th>
<th>Sharing Preprints</th>
</tr>
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<tbody>
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<td><img src="image5.png" alt="Image" /></td>
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</table>

<table>
<thead>
<tr>
<th>Data Protection &amp; Ethics</th>
<th>Open Source Software &amp; Workflows</th>
<th>Managing &amp; Sharing Research Data</th>
<th>Open Science &amp; Innovation</th>
<th>Open Licensing</th>
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www.fosteropenscience.eu/toolkit
Open Science Courses

• Answering burning questions of researchers

• Where relevant, discipline specific examples (CRG, GESIS, DARIAH-EU)

• Interactive content (gamification, quizzes)

• Reviewed by community

www.fosteropenscience.eu/toolkit
Badges

• 5 learning paths
• Effort 2-4 hours
• Complete a set of courses & get a badge

FOLLOW OUR LEARNING PATHS:

- The open peer reviewer
- The responsible data sharer
- The reproducible research practitioner
- The open innovator
- The open access author
Learning paths

The Reproducible Research Practitioner

The Open Peer Reviewer

The Open Access Author

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Do you organise Open Science trainings yourself or are planning to do so? On this page you can find a set of materials that offer some inspiration or help you to get started in the first place. Take a look and adapt or re-use the resources for your own trainings.

The Open Science Training Handbook

This handbook brings together methods, techniques and practices, to support educators of Open Science to create high quality and engaging trainings. It is available under Creative Commons Public Domain Dedication (CC0 1.0 Universal). You do not have to ask our permission to re-use and copy information from this handbook.

- Access the Open Science training handbook here.

Illustrations, icons & cartoons

During the book sprint the artist Patrick Hochstenbach draw more than 100 icons and cartoons to illustrate the Open Science training handbook. They are now for you available under Creative Commons Public Domain Dedication (CC0 1.0 Universal) to re-use.

- Download the large set of small icons such as a book, coffee, researcher, megaphone etc. here: Large ZIP archive of PNG graphics (1.5Mb)
- Download the 16 cartoons, e.g. fundamental rules of open science here: ZIP archive of 16 PNG Illustrations (15Mb)
How to get the most out of your microarray experiment. A Webinar

*Materials from the ELIXIR webinar "How to get the most out of your microarray experiment"*, Feb 14, 2017

**Keywords:** life sciences, microarrays, eLearning, EeLP

**Resource type:** course materials, Training materials, Slides

ELIXIR eLearning definitions

Materials from the asynchronous learning course "ELIXIR eLearning definitions"

**Keywords:** eLearning, training, EeLP
About this expert tour guide

This tour guide by CESSDA ERIC (the Consortium of European Social Science Data Archives European Infrastructure Consortium) aims to put social scientists like yourself at the heart of making their research data findable, understandable, sustainably accessible and reusable.

You will be guided by European experts who are - on a daily basis - busy ensuring long-term access to valuable social science datasets, available for discovery and reuse at one of the 17 CESSDA social science data archives. With this guide and the training events being held across Europe, we want to accompany and inspire you in your journey through the data life cycle.
FOSTER
How to give training
<p>| | |</p>
<table>
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</table>
| 1. Adults are internally motivated and self-directed | ● Graded learning – increase complexity as the program unfolds  
    ● Lead the student toward inquiry – before too many facts  
    ● Feedback – regular, constructive and specific  
    ● Goals – which they complete and “kick off”  
    ● Encourage use of resources  
    ● Vary learning styles (e.g. VARK) |
| 2. Adults bring life experiences and knowledge to learning experiences | ● Draw on experiences  
    ● Facilitate reflective learning opportunities |
| 3. Adults are goal oriented | ● Link learning to work goals  
    ● Provide real case-studies  
    ● Ask questions – motivate reflection, inquiry and further research |
| 4. Adults are relevancy oriented | ● Reflection – what they learnt, how to apply it  
    ● Provide some choice – to reflect individual interests |
| 5. Adults are practical | Students move from classroom to hands-on problem solving where they can recognise firsthand how what they are learning applies to the work context.  
    ● Be explicit – about how learning is useful and applicable to the job  
    ● Active participation – try things rather than observe |
| 6. Adult learners like to be respected | Respect can be demonstrated by:  
    ● Acknowledge – the wealth of experiences  
    ● Regarding them as an equal colleague  
    ● Encourage expression – of ideas, reasoning and feedback |
| 7. Adults are pressed for time | (from *Training Principles of Adult Learning White Paper*)  
    ● Just in time  
    ● Just for me |

https://docs.google.com/document/d/1ohUqqST7Q23styDUU6l25W2q7rvYpvbr_ZJsJxOfjA/edit
Plan based on outcomes rather than objectives
Learning objectives

• Describe the intentions of the instructor by stating the purpose and goals of the course.
• Focus on the content and skills important within the programme.
• May describe what the instructors will do.
• Should be specific and detailed.

Learning outcomes

Learning outcomes are statements that describe or list measurable and essential mastered content-knowledge — reflecting skills, competencies, and knowledge that trainees have achieved and can demonstrate upon successfully completing a course.

Learning outcomes (2)

Outcomes express higher-level thinking skills that integrate course content and activities and can be observed as a behavior, skill, or discrete usable knowledge upon completing the course.
Learning outcomes (3)

Outcomes are exactly what assessments are intended to show - specifically what the trainees will be able to do upon completing the course. An assessable outcome can be displayed or observed and evaluated against criteria. Outcomes are clear and measurable criteria for guiding the teaching, learning, and assessment process in the course.
This introductory course will help you to understand what open science is and why it is something you should care about. You'll get to grips with the expectations of research funders and will learn how practising aspects of open science can benefit your career progression.
Upon completing this course, you will

• understand what Open Science means and why you should care about it
• be aware of some of the different ways to go about making your own research more open over the research lifecycle
• understand why funding bodies are in support of Open Science and what their basic requirements are
• be aware of the potential benefits of practicing open science
It’s up to you ...

• in groups of 3 ...
• each pick an aspect of open science that interests you
• write it down
• think of a learning outcomes for training on your chosen aspect
• compare & discuss the results in your group
FOSTER

Your role as a trainer (self-reflection)
It’s up to you ...

• In groups of 2 ...

• Look at the scenarios on your handout

• In each column, choose the one you’d be most and least comfortable with. Do this **individually**.

• Compare & discuss the results with your neighbour

• What makes certain scenarios easier or harder for each of you?
In both lists below mark the characteristic which would make you as a trainer feel the most (M) comfortable and the least (L) comfortable.

A session ....

- with participants not from your field
- with just undergraduates
- with 8 people sent by one employer and 2 others
- with just librarians
- with only professors
- with all participants paying a 300€ fee for 1 day
- with 50% researchers & 50% traditional publishers
- with people from all parts of the world

A session ....

- with people dropping in late and leaving suddenly
- where participants want to change the programme
- without internet
- where participants work with a self paced tutorial
- in a café instead of a classroom
- where the host introduces you as super OS expert
- where you are the only facilitator
- where the goal is to convince people of OS
With thanks to Bianca Kramer & Jeroen Bosman for exercises!

Aspects of Open Science training

available at: 10.6084/m9.figshare.6163790

Bianca Kramer & Jeroen Bosman, Utrecht University Library
FOSTER Open Science Bootcamp, April 18-20, 2018

@MsPhelps @jeroenbosman
Finding a place for your training & messages in the competitive research landscape

• What methods do you, and could you, use to drive attention to your training activities?
• What methods do you, and could you, use to drive up attendance at your training activities - how can you turn REGISTRATION (i.e. interest) into ATTENDANCE (i.e. action)

https://docs.google.com/document/d/1ohUqqST7Q23styDULU6t25W2q7rvYpvbr_ZlsJx0fjA/edit
How do you know if you are making a difference?

How does your unit/department evaluate the efficacy & impact of training it provides to researchers & students? Table discussion.

https://docs.google.com/document/d/1ohUqqST7Q23styDULU6t25W2q7rvYpvr_ZlsJxOfjA/edit
Designing your own mini-training
Design your own training

FORMAT:
Half day workshop

TOPIC:
Choose (per 2)

Pick a Card:

AUDIENCE SIZE
AUDIENCE TYPE
KNOWLEDGE LEVEL

Create a PERSONA

Present your plans (15 mins):
- Structure
- Materials
- Exercise
- ...
<table>
<thead>
<tr>
<th>Training Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Half day training</td>
</tr>
<tr>
<td>Workshop (half day)</td>
</tr>
<tr>
<td>Tutorial</td>
</tr>
<tr>
<td>Online training course</td>
</tr>
<tr>
<td>Workshop (full day)</td>
</tr>
<tr>
<td>Webinar</td>
</tr>
<tr>
<td>Lecture</td>
</tr>
<tr>
<td>Workshop (multiple days)</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>
Audience SIZE
Audience TYPE

Librarian  PHD Student/Junior Researcher  Project Coordinator
Research Administration  Senior Researcher  Funder
Repository Manager  Citizen  Other
Knowledge Level

- No prior knowledge
- Basic knowledge (aware of)
- Basic knowledge (practitioner)
- Advanced knowledge (practitioner)
- Advanced knowledge (trainer)
- Unknown
- Mixed
Your audience

BIO
Occupation:
Age:
Education:
Personality in 3 words:

SKILLS (1 = none, 5 = very skilled)
Job experience: 1 2 3 4 5
Open Science 1 2 3 4 5
Training experience 1 2 3 4 5
Technology: 1 2 3 4 5

MOTIVATION/GOALS

FRUSTRATION
Name:
The Unpredictable: Audience Mood

<table>
<thead>
<tr>
<th>Sceptical</th>
<th>Quiet</th>
<th>Uninterested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eager to learn</td>
<td>Chaotic</td>
<td>Do not understand you</td>
</tr>
<tr>
<td>Ask many questions</td>
<td>Hostile</td>
<td>Agreeable</td>
</tr>
</tbody>
</table>
The Unpredictable: External factors

- Audience is checking e-mails
- No WIFI!
- Audience keeps looking at phone
- Disturbing noise
- Forgot something!
- One person dominates
- Sound issues
- Room temperature is uncomfortable
- Venue is not suitable
Design your own training

Present your plans (15 mins):
● Structure
● Materials
● Exercise
● ...

Troubleshooting:

EVALUATION
● Is the proposed training appropriate for audience size, type and level of knowledge?
● Are the training materials adequate, understandable and accessible?
Thank you! Questions?
Facebook: @fosteropenscience
Twitter: @fosterscience
Youtube: FOSTER Open Science

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 741839