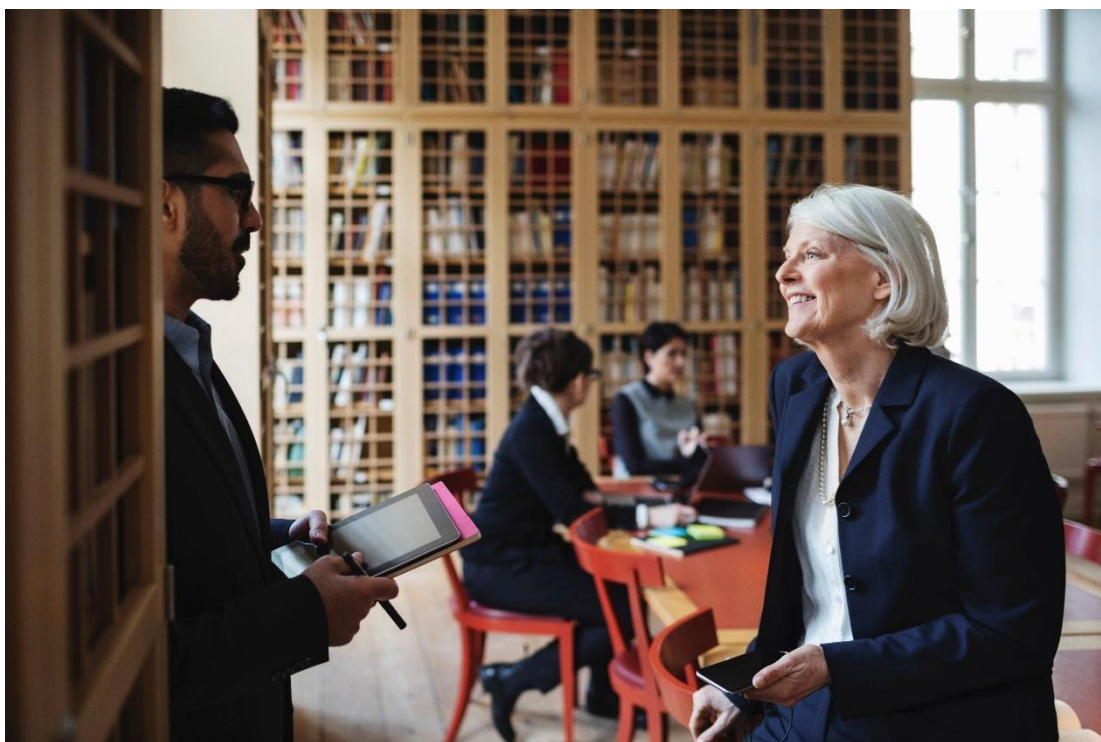




TRAINING MATERIALS for Responsible Open Science Part II: Humanities

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Introduction

The aim of the ROSiE Training Materials for Responsible Open Science is to learn how to practice Open Science (OS) responsibly and how to prevent research misconduct in the context of OS by providing necessary knowledge and developing specific skills and attitudes.

In the ROSiE Didactic Framework we have identified the following skills and attitudes necessary for responsible practising of OS in four domains: (i) local and global citizenship, (ii) personal and social responsibility, (iii) epistemic skills, and (iv) collaborative problem-solving.



Local and global citizenship

- awareness of the importance and social benefits of OS and citizen science in local and global contexts
- participation in ethics and integrity self-regulation of OS and citizen science community



Personal and social responsibility

- personal and professional responsibility for implementation of OS and production of results
- openness to share own research data, results, tools and publications and appreciation of efforts of others



Epistemic skills

- ability to organize, present and use open data and knowledge with integrity
- ability to critically assess data, knowledge and scientific results produced by others
- ability to identify ethical and integrity issues in OS



Collaborative problem-solving

- ability to apply critical thinking skills in collaborative analysis of ethical and integrity problems in OS
- discussing, finding solutions and making decisions to handle ethics and integrity issues within OS community

To achieve optimal results, the ROSiE training materials rely on several learning and teaching strategies: (i) collaborative problem solving; (ii) case-based activities; (iii) dialogical activities; (iv) transformative learning. More information about these teaching strategies you can find in the ROSiE Didactic Framework.

The training material consists of a trainers' file including 8 units and respective activities, as well as a separate folder including materials for trainees – required readings, handouts and printouts. The activities can be implemented separately (e.g., for organising a single workshop to discuss cases) or for organising a complete two-days training course. The suggested schedule for the training course is as follows:

| Time | DAY 1 | Type of activity |
|---------|---|---|
| 90 min. | Unit 1. Ethical and societal foundations of OS, its purpose | Home readings and Socratic seminar |
| 15 min. | Break | |
| 90 min. | Unit 2. Protection of research participants' rights in OS. Protection of cultural heritage. | Case discussion |
| 60 min. | Lunch break | |
| 90 min. | Unit 3. Ethical aspects of citizen science in the context of OS | Home readings and group project |
| 15 min. | Break | |
| 90 min. | Unit 4. Protection of intellectual property in the context of OS | Case discussion |
| Time | DAY 2 | Type of activity |
| 90 min. | Unit 5. The quality of the research outputs and data sets | Home readings and case discussion |
| 15 min. | Break | |
| 90 min. | Unit 6. Responsible sharing and use of open humanities data | Case discussion |
| 60 min. | Lunch break | |
| 90 min. | Unit 7. Prevention of research malpractices in the context of OS | Group work and plenary activity OR Case discussion |
| 15 min. | Break | |
| 90 min. | Unit 8. Responsible dissemination/publication practices | Case discussion (Four Quadrant Method) |

Unit 1. Ethical and societal foundations of OS, its purpose

Activity 1. Principles, values and benefits of OS, main challenges in OS implementation

DESCRIPTION


This activity starts with homework where trainees are asked to read [UNESCO Recommendation on Open Science](#) and fill in the double-entry reading journal. The purpose of the reading journal is to give trainees an opportunity to express their thoughts and reflect on the text. It is followed by classroom discussion in a form of Socratic seminar on principles and values of OS, as well as main benefits and challenges in OS implementation.

Type of activity: home reading and Socratic seminar

Time: 90 min.

Target groups: students, early career researchers, senior researchers

Learning outcomes:

| | Learning outcomes <i>It is expected that trainees will:</i> | Indicators for their achievement <i>Trainees who have fully met the learning outcome are able to:</i> |
|---|---|--|
|  | – demonstrate knowledge of ethical foundations of OS | – explain and discuss principles and values of OS, its ethical foundations, and social benefits |
| | – understand the significance of OS and citizen science for identifying and solving scientific problems and societal challenges | – provide examples for role of OS and citizen science in identifying and solving scientific problems and societal challenges |

PROCEDURE

1. At least a week before the workshop send trainees the required readings ([UNESCO Recommendation on Open Science](#), file "HU_U1A1 Readings UNESCO Recommendation") and the handout (file "HU_U1A1 Handout").
2. Before the workshop trainees are required to read the parts I., II. and III. of the [UNESCO Recommendation on Open Science](#) (pp. 6-19).
3. Before the workshop trainees should fill in the double-entry reading journal table in the handout. The left side should contain quotations from the UNESCO

Recommendation on Open Science with page numbers noted. The right side should contain trainee's response to each quotation (a question, commentary, analysis). When filling in the table, trainees may use the following prompts, included in the handout:

- *I agree/disagree with..., because...*
 - *It is not clear for me...*
 - *I see the following challenges...*
 - *I have a question regarding...*
 - ...
4. The classroom discussion is organized as a Socratic seminar. The aim of the Socratic seminar is to achieve "*a deeper understanding about the ideas and values in a particular text*"¹. The trainer is facilitator of the discussion, the discussion is led by using open-ended, high-level questions. Trainees are sitting in a circle.
 5. The Socratic Seminar starts with introduction of the rules:
 - Only those trainees who have read the text and filled in the double-entry reading journal are allowed to participate;
 - It is important to focus on the text and to refer to evidence from the text;
 - Trainees are encouraged to talk to each other, not just to the trainer and to listen and respond to others' arguments.
 6. Common questions used during a Socratic Seminar activity both by trainer and trainees include:
 - *What does this concept/idea/phrase etc. mean?*
 - *What do you think the authors are trying to say?*
 - *Is this what you mean to say...?*
 - *What is the origin of this?*
 - *What are the implications of this?*
 - *What else could that mean?*
 - *What would happen if....?*
 7. This [overview of Socratic seminar](#) provides a list of suitable questions and more information about how to prepare for a discussion.

PLANNING

Resources and equipment:

- Handout "HU_U1A1 Handout"
- Required readings "HU_U1A1 Readings UNESCO Recommendation"
- Make space for the trainees to sit in a circle

FURTHER READINGS

¹ Castellanos-Reyes, D. Socratic Seminar. Available at:
https://edtechbooks.org/studentguide/socratic_seminar



1. Longley Arthur, P., & Hearn, L. (2021). Toward open research: A narrative review of the challenges and opportunities for open humanities. *Journal of Communication*, 71(5), 827-853. <https://doi.org/10.1093/joc/jqab028>
2. Düwell, M. (2019). Open science and ethics. *Ethical Theory and Moral Practice*, 22(5), 1051-1053. <https://link.springer.com/article/10.1007/s10677-019-10053-3>
3. Tennant, J. P., Waldner, F., Jacques, D. C., Masuzzo, P., Collister, L. B., & Hartgerink, C. H. (2016). The academic, economic and societal impacts of Open Access: an evidence-based review. *F1000Research*, 5. <https://f1000research.com/articles/5-632/v3>



Unit 2. Protection of research participants' rights in OS, protection of cultural heritage

Activity 2. Open sharing of sensitive qualitative data



DESCRIPTION

This activity is built around case discussion. Trainees are asked to discuss in small groups one or two cases on ethical issues in gathering, sharing and reuse of sensitive qualitative data (life stories and social media data) in humanities. Afterwards, small groups report to the whole group and continue with a reflective discussion involving the whole group.

Type of activity: case discussion

Target group: students, early career researchers, senior researchers

Learning outcomes:

| | Learning outcomes <i>It is expected that trainees will:</i> | Indicators for their achievement <i>Trainees who have fully met the learning outcome are able to:</i> |
|---|--|---|
|  | <ul style="list-style-type: none"> recognize and analyse the risks to research participants in the context of OS | <ul style="list-style-type: none"> discuss how to minimize risks to research participants when practicing OS |
|  | <ul style="list-style-type: none"> apply critical thinking skills - questioning, comparing, summarizing, drawing conclusions, and defending - to case studies on ethics and integrity in OS | <ul style="list-style-type: none"> develop reflective questions to define ethical problems in the case study discuss cases with colleagues justify a personal position on the case |

PROCEDURE

- Depending on the size of the group and background of the trainees choose how many cases to discuss during the workshop. There are two cases included in the file "HU_U2A2 Handout".
- Print out the case descriptions and questions for discussion for each trainee (file "HU_U2A2 Handout").
- Introduce the activity, its aim and, briefly, the procedure.
- Ask trainees to split in small groups (4-5 trainees in a group) and to choose a rapporteur - a group member who will report results of the small group discussion to the whole group. Provide each group with a paper for taking notes.

5. **Step 1:** small group discussions – **30 minutes**. Trainees read the case description and discuss the questions in small groups. Each group takes notes. Rapporteurs prepare to present the results to the whole group.
6. **Step 2:** reports from small group discussions – **30 minutes**. Depending on the number of the small groups, allocate a time slot for each group presentation (e.g., if there are 4 small groups, each group have 10 minutes for a presentation). Rapporteurs present the results of their group discussions.
7. **Step 3:** group discussion – **30 minutes**. The trainer moderates a reflective group discussion. The trainer writes the solutions suggested during the discussion on the whiteboard and summarises them. Sample questions for reflective discussion are, e.g.:
 - *What are the specific ethical concerns related to archiving, open sharing and reuse of social media data?*
 - *What are specific requirements for open sharing of data collected from vulnerable research participants?*
 - *How to inform research participants about open sharing of data? What are specific requirements for informed consent/assent in the context of open sharing of data?*
 - *How to ensure privacy of research participants? Is it possible to anonymize qualitative data? If so, how?*

PLANNING

Resources and equipment:

- Handout “HU_U2A2 Handout”
- Paper for taking notes during small group discussions
- Whiteboard for discussion notes
- Make space for the trainees to work in small groups

FURTHER READINGS

1. Fox, J., Pearce, K. E., Massanari, A. L., Riles, J. M., Szulc, Ł., Ranjit, Y. S., ... & L. Gonzales, A. (2021). Open science, closed doors? Countering marginalization through an agenda for ethical, inclusive research in communication. *Journal of Communication*, 71(5), 764-784. <https://doi.org/10.1093/joc/jqab029>
2. DuBois, J. M., Strait, M., & Walsh, H. (2018). Is it time to share qualitative research data? *Qualitative Psychology*, 5(3), 380–393. <https://doi.org/10.1037/qup0000076>

Activity 2.1 Open data and risk of looting in archaeology



DESCRIPTION

This activity is built around case discussion. Trainees are asked to discuss in small groups a case on risk of looting in archaeology in the context of sharing open data. Afterwards, small groups report to the whole group and continue with a reflective discussion involving the whole group.

Type of activity: case discussion

Target group: students, early career researchers, senior researchers

Learning outcomes:

| | Learning outcomes <i>It is expected that trainees will:</i> | Indicators for their achievement <i>Trainees who have fully met the learning outcome are able to:</i> |
|---|--|---|
|  | <ul style="list-style-type: none"> describe the risks to cultural heritage in the context of OS | <ul style="list-style-type: none"> minimize risks to cultural heritage when practicing OS |
|  | <ul style="list-style-type: none"> apply critical thinking skills - questioning, comparing, summarizing, drawing conclusions, and defending - to case studies on ethics and integrity in OS | <ul style="list-style-type: none"> develop reflective questions to define ethical problems in the case study discuss cases with colleagues justify a personal position on the case |

PROCEDURE

1. Print out the case description and questions for discussion for each trainee (file "HU_U2A2.1 Handout").
2. Introduce the activity, its aim and, briefly, the procedure.
3. Ask trainees to split in small groups (4-5 trainees in a group) and to choose a rapporteur - a group member who will report results of the small group discussion to the whole group. Provide each group with a paper for taking notes.
4. **Step 1:** small group discussions – **30 minutes**. Trainees read the case description and discuss the questions in small groups. Each group takes notes. Rapporteurs prepare to present the results to the whole group.
5. **Step 2:** reports from small group discussions – **30 minutes**. Depending on the number of the small groups, allocate a time slot for each group presentation (e.g., if there are 4 small groups, each group have 10 minutes for a presentation). Rapporteurs present the results of their group discussions.

6. **Step 3:** group discussion – **30 minutes**. The trainer moderates a reflective group discussion. The trainer writes the solutions suggested during the discussion on the whiteboard and summarises them. Sample questions for reflective discussion are, e.g.:
 - *What is your personal experience with open sharing of sensitive archaeological data?*
 - *How to responsibly implement the principle “as open as possible and as closed as necessary” regarding archaeological research data?*
 - *Who should make decisions about whether and how to manage access to sensitive archaeological data? Who should decide whether data is sensitive?*

PLANNING

Resources and equipment:

- Handout “HU_U2A2.1 Handout”
- Paper for taking notes during small group discussions
- Whiteboard for discussion notes
- Make space for the trainees to work in small groups

FURTHER READINGS

1. Smith, C. (2020). Ethics and best practices for mapping archaeological sites. *Advances in Archaeological Practice*, 8(2), 162-173.
<https://doi.org/10.1017/aap.2020.9>
2. Huggett, J. (2015). Digital Haystacks: Open Data and the Transformation of Archaeological Knowledge. *Open Source Archaeology: Ethics and Practice*, 6-29.
<http://dx.doi.org/10.17613/yfss-zt74>

Unit 3. Ethical aspects of citizen science in the context of OS

Activity 3. Development of an ethically sound citizen science project


DESCRIPTION

This activity involves home reading before the classroom activity, to introduce the concept of citizen science in the context of humanities. It is followed by group project onsite where trainees are asked to develop their own citizen science projects in humanities and analyse ethical aspects of these projects.

Type of activity: home readings and group project

Target group: students, early career researchers, senior researchers

Learning outcomes:

| | Learning outcomes <i>It is expected that trainees will:</i> | Indicators for their achievement <i>Trainees who have fully met the learning outcome are able to:</i> |
|---|--|---|
|  | – understand the significance of citizen science for identifying and solving scientific problems and societal challenges | – provide examples for role of citizen science in identifying and solving scientific problems and societal challenges |

PROCEDURE

1. At least a week before the workshop send trainees the required readings (file "HU_U3A3 Readings Heinisch et al 2021"):
Heinisch, B., Oswald, K., Weißpflug, M., Shuttleworth, S., & Belknap, G. (2021). Citizen humanities. In: The Science of Citizen Science. Springer https://doi.org/10.1007/978-3-030-58278-4_8
2. During the workshop, introduce the group activity, its aim and, briefly, the procedure.
3. Ask trainees to split in three groups. The group task is to develop an idea for a citizen science project in humanities, by using definitions and examples provided in the required readings. For taking notes print one copy of "HU_U3A3 Handout" for each group.

4. **Step 1** development of the project idea – **30 minutes**. Each group should discuss and fill in the table 1 in the “HU_U3A3 Handout”.
5. **Step 2** reflection on ethical aspects of the project – **30 minutes**. Each group should discuss and fill in the table 2 in the “HU_U3A3 Handout”.
6. **Step 3** presentation of group projects and general discussion – **30 minutes**. Sample questions for reflective discussion are, e.g.:
 - *What does citizen science add to the field of humanities?*
 - *What are the main ethical challenges and their solutions in citizen science projects in humanities?*

PLANNING

Resources and equipment:

- Readings “HU_U3A3 Readings Heinisch et al 2021”
- Handout “HU_U3A3 Handout”
- Make space for the trainees to work in small groups

FURTHER READINGS

1. López, M. P., Soekijad, M., Berends, H., & Huysman, M. (2020). A knowledge perspective on quality in complex citizen science. *Citizen Science: Theory and Practice*, 5(1). <http://doi.org/10.5334/cstp.250>
2. Mahr, D., Göbel, C., Irwin, A., & Vohland, K. (2018). Watching or being watched- enhancing productive discussion between the citizen sciences, the social sciences and the humanities. UCL Press. <https://doi.org/10.14324/111.9781787352339>
3. Tauginienė, L., Butkevičienė, E., Vohland, K., Heinisch, B., Daskolia, M., Suškevičs, M., ... & Prūse, B. (2020). Citizen science in the social sciences and humanities: the power of interdisciplinarity. *Palgrave Communications*, 6(1), 1-11. <https://doi.org/10.1057/s41599-020-0471-y>

Unit 4. Protection of intellectual property in the context of OS

Activity 4. Authorship and co-authorship in digital humanities



DESCRIPTION

This activity is built around case discussion and involves evaluating pro and contra arguments for co-authorship in digital humanities. Trainees are asked to discuss the case in small groups, develop and discuss their arguments. Afterwards, small groups report to the whole group and continue with a reflective discussion involving the whole group.

Type of activity: case discussion

Target group: students, early career researchers, senior researchers

Learning outcomes:

| | Learning outcomes <i>It is expected that trainees will:</i> | Indicators for their achievement <i>Trainees who have fully met the learning outcome are able to:</i> |
|---|--|---|
|  | <ul style="list-style-type: none"> - be aware of protection of intellectual property in OS | <ul style="list-style-type: none"> - acknowledge authors and contributors of open data sets and other research outputs |
|  | <ul style="list-style-type: none"> - apply critical thinking skills - questioning, comparing, summarizing, drawing conclusions, and defending - to case studies on ethics and integrity in OS | <ul style="list-style-type: none"> - develop reflective questions to define ethical problems in the case study - discuss cases with colleagues - justify a personal position on the case |

PROCEDURE

1. Introduce the activity, its aim and, briefly, the procedure.
2. Ask trainees to split in small groups (3-4 trainees in a group) and to choose a rapporteur - a group member who will report results of the small group discussion to the whole group.
3. Print out case description and questions for discussion for each trainee (file "HU_U4A4 Handout").
4. **Step 1:** small group discussions – **30 minutes**. Trainees read the case description and discuss the questions in small groups. Each group fills in the table included in the

handout with pro and contra arguments. Rapporteurs prepare to present the results to the whole group.

5. **Step 2:** short reports from small group discussions – **20 minutes**. Rapporteurs present the results of their group discussions - pro and contra arguments for each type of acknowledging the contribution of citizen scientists in this case.
6. **Step 3:** group discussion – **40 minutes**. The trainer moderates a reflective group discussion. Sample questions for reflective discussion are, e.g.:
 - *What are the advantages and disadvantages of collaborative publishing in digital humanities?*
 - *How to recognize contribution of each co-author in case of collaborative authorship? What criteria of authorship should be used?*
 - *What ethical problems might arise in the context of collaborative authorship? How to prevent and solve these problems?*

PLANNING

Resources and equipment:

- Handout "HU_U4A4 Handout"
- Make space for the trainees to work in small groups

FURTHER READINGS

1. McCarty, W. (2016). Collaborative research in the digital humanities. In *Collaborative Research in the Digital Humanities* (pp. 13-22). Routledge. <https://doi.org/10.4324/9781315572659>
2. How to Handle Authorship Disputes: A Guide for New Researchers. Albert T, Wager E. <https://bit.ly/2KWD1IO>
3. The Embassy of Good Science: "[Authorship criteria](#)"



Unit 5. The quality of the research outputs and data sets

Activity 5. Responsibility of researchers and citizen scientists for quality of research data

DESCRIPTION



This activity starts with homework where trainees are asked to read a paper on data quality in citizen science and create a mind map. The purpose of the mind map is to build a background knowledge for case discussion. It is followed by case discussion and development of guidelines for ensuring quality of citizen social sciences data.

Type of activity: home reading and case discussion

Time: 90 min.

Target group: students, early career researchers

Learning outcomes:

| | Learning outcomes <i>It is expected that trainees will:</i> | Indicators for their achievement <i>Trainees who have fully met the learning outcome are able to:</i> |
|---|--|---|
|  | <ul style="list-style-type: none"> - be aware of importance of the quality of data sets and research outputs in OS and their responsible use | <ul style="list-style-type: none"> - explain how to responsibly and critically assess and use open data and research outputs |
|  | <ul style="list-style-type: none"> - apply critical thinking skills - questioning, comparing, summarizing, drawing conclusions, and defending - to case studies on ethics and integrity in OS | <ul style="list-style-type: none"> - develop reflective questions to define ethical problems in the case study - discuss cases with colleagues - justify a personal position on the case |

PROCEDURE

1. At least a week before the workshop send trainees the required readings (file "HU_U5A5 Readings Balazs et al 2021") and the handout for creating a mind map (file "HU_U5A5_1 Handout").
2. Before the workshop trainees are required to read the required readings "HU_U5A5 Readings Balazs et al 2021"

Balázs, B., Mooney, P., Nováková, E., Bastin, L., Jokar Arsanjani, J. (2021). Data Quality in Citizen Science. In: The Science of Citizen Science. Springer https://doi.org/10.1007/978-3-030-58278-4_8.

3. Before the workshop trainees should create a mind map on quality of data in citizen science, based on the required readings. Instructions for creating a mind map are included in the handout "HU_U5A5_1 Handout".
4. In the classroom, introduce the activity, its aim and, briefly, the procedure.
5. Ask trainees to split in small groups (4-6 trainees in a group) and to choose a rapporteur - a group member who will report results of the small group discussion to the whole group.
6. Print out the case description (file "HU_U5A5_2 Handout") for each trainee
7. **Step 1:** small group discussions – **40 minutes**. Trainees read the case description, discuss the challenges, use the ideas from required readings and develop recommendations. Each group fills in a table with challenges and recommendations. The table is included in the "HU_U5A5_2 Handout". Rapporteurs prepare to present the results to the whole group.
8. **Step 2:** reports from small group discussions – **30 minutes**. Depending on the number of the small groups, allocate a time slot for each group presentation (e.g., if there are 3 small groups, each group have 10 minutes for a presentation). Rapporteurs present the results of their group discussions.
9. **Step 3:** group discussion – **20 minutes**. The trainer moderates a reflective group discussion. Sample questions for reflective discussion are, e.g.:
 - *Which ideas from the required readings helped you to develop recommendations? How?*
 - *Which of the recommendations developed during the groupwork are the most useful? Why?*
 - *In your view, what are other considerable ethical challenges for scientists collaborating with citizen scientists in the field of humanities? How to address these challenges?*

PLANNING

Resources and equipment:

- Required readings "HU_U5A5 Readings Balazs etal 2021"
- Handout "HU_U5A5_1 Handout" for home reading and creating a mind map
- Handout "HU_U5A5_2 Handout" for case discussion
- Make space for the trainees to work in small groups



FURTHER READINGS

1. López, M. P., Soekijad, M., Berends, H., & Huysman, M. (2020). A knowledge perspective on quality in complex citizen science. *Citizen Science: Theory and Practice*, 5(1). <http://doi.org/10.5334/cstp.250>



Unit 6. Responsible sharing and reuse of open humanities data

Activity 6. Concerns to share and reuse data

DESCRIPTION


This activity starts with brainstorming where trainees are asked to share their views on sharing and reusing research data. It is followed by group discussion on concerns to share and reuse data, as well as possible solutions.

Type of activity: brainstorming and group discussion

Time: 90 min.

Target group: students, early career researchers, senior researchers

Learning outcomes:

| | Learning outcomes <i>It is expected that trainees will:</i> | Indicators for their achievement <i>Trainees who have fully met the learning outcome are able to:</i> |
|---|--|---|
|  | – be aware about factors influencing willingness to share and use open research data | – discuss how to increase willingness to share and use open research data |

PROCEDURE

- Step 1: brainstorming – 15 minutes.** The trainer starts brainstorming by posing two questions: (1) "Are you ready to share your research data in an open data repository? Why yes or no?" and (2) "Are you ready to use open access data in your research? Why yes or no?" and invite trainees to take a minute's silence to think on it. Once the minute is up, invite everyone to share their views. Have a single person (trainer or one of trainees) who takes notes on a whiteboard. The main aim of brainstorming is just to listen to different views without criticism.
- Ask trainees to split in small groups (4-6 trainees in a group) and to choose a rapporteur - a group member who will report results of the small group discussion to the whole group.
- Distribute the handout (file "Handout HU_U6A6") to each group. Half of the groups receive Task 1 from the handout ("Sharing your own research data"), other groups get Task 2 from the handout ("Using open data created by other researchers").

4. **Step 2:** small group discussions – **30 minutes**. Trainees discuss and fill in a table with concerns and possible solutions. Rapporteurs prepare to present the results to the whole group.
5. **Step 3:** reports from small group discussions – **30 minutes**. Depending on the number of the small groups, allocate a time slot for each group presentation (e.g., if there are 3 small groups, each group have 10 minutes for a presentation). Rapporteurs present the results of their group discussions.
6. **Step 3:** group discussion – **15 minutes**. The trainer moderates a reflective group discussion. Sample questions for reflective discussion are, e.g.:
 - *What are the most important concerns discouraging researchers to share their data for reuse and to use open data created by other researchers? What are possible solutions?*
 - *How to responsibly share and reuse quantitative data in humanities? Is it possible to responsibly share and reuse qualitative data? How?*

PLANNING

Resources and equipment:

- Handout “Handout HU_U6A6” printed out for each small group
- Whiteboard for discussion notes
- Make space for the trainees to work in small groups

FURTHER READINGS

1. Zuiderwijk, A., Shinde, R., & Jeng, W. (2020). What drives and inhibits researchers to share and use open research data? A systematic literature review to analyze factors influencing open research data adoption. *PloS one*, 15(9), e0239283.
<https://doi.org/10.1371/journal.pone.0239283>

Unit 7. Prevention of research malpractice in the context of OS

Activity 7. Violations of research integrity in OS and their prevention


The activity aims to discuss different types of violations of research integrity in OS and their prevention. The trainees are split into five groups and their task is to reflect on potential type of violation and preventive measure in each particular type of Open Science activity. Each group shares the results of their discussions, and group work is followed by plenary activity where all trainees have an opportunity to supplement the results of group work.

Type of activity: group work and plenary activity

Time: 90 minutes

Target group: students, early career researchers, senior researchers

Learning outcomes:

| | Learning outcomes <i>It is expected that trainees will:</i> | Indicators for their achievement <i>Trainees who have fully met the learning outcome are able to:</i> |
|---|---|---|
|  | – know potential types of research malpractice in OS | – discuss causes of violations of research integrity in OS and ways of its prevention |

PROCEDURE

- Before to the exercise, print out the pages with different types of Open Science activities (file "HU_U7A7 Printout") and mark sections of a wall with the titles:
 - *Open access publishing*
 - *Sharing and using open data*
 - *Open reproducible research, e.g., open lab notes, reproducing of research studies*
 - *Open science evaluation, e.g., open metrics and impact, open peer review*
 - *Citizen science*
- Ask participants to split in five groups. Assign one of the types of Open Science activities listed above to each group.
- Step 1:** group discussion – **25 minutes**. Each group discusses the following questions in the context of the particular type of Open Science activities:

- *What potential violations of research integrity may arise in the context of this type of open science activities?*
- *How to prevent these potential violations?*

The results of the discussion should be written on paper cards/sticky notes – one potential type of violation and preventive measure on each card/sticky note and hanged on the wall under the respective type of Open Science activities.

4. **Step 2:** group work presentations and general discussion – **65 minutes**. Each group presents their results in 5 minutes. After each presentation there is 8 minutes general discussion where every trainee has an opportunity to suggest additional challenges and preventive measures. These additional challenges and preventive measures are written on paper cards/sticky notes and added to the respective type of Open Science activities.

PLANNING

Resources and equipment:

- Printout "Printout HU_U7A7"
- Large wall or multiple pinboards to hang on printouts and results of discussions
- Empty cards & tape/sticky notes, pens/markers
- Make space for the trainees to work in small groups and to move around

FURTHER READINGS

1. Laine, H. (2017). Afraid of scooping: Case study on researcher strategies against fear of scooping in the context of open science. *Data Science Journal*. <https://doi.org/10.5334/dsj-2017-029>



Activity 7.1. Violations of intellectual property rights

DESCRIPTION


This activity is built around case discussion. Trainees are asked to discuss in small groups a case on violations of intellectual property rights. Afterwards, small groups report to the whole group and continue with a reflective discussion involving the whole group.

Type of activity: case discussion

Time: 90 minutes

Target group: students, early career researchers, senior researchers

Learning outcomes:

| | Learning outcomes <i>It is expected that trainees will:</i> | Indicators for their achievement <i>Trainees who have fully met the learning outcome are able to:</i> |
|---|--|---|
|  | <ul style="list-style-type: none"> – know potential types of research malpractice in OS | <ul style="list-style-type: none"> – discuss causes of violations of research integrity in OS and ways of its prevention – recognise limits of OS for protection of data and intellectual property rights |

PROCEDURE

1. Print out the case description and questions for discussion for each trainee (file "HU_U7A7.1 Handout").
2. Introduce the activity, its aim and, briefly, the procedure.
3. Ask trainees to split in small groups (4-5 trainees in a group) and to choose a rapporteur - a group member who will report results of the small group discussion to the whole group. Provide each group with a paper for taking notes.
4. **Step 1:** small group discussions – **30 minutes**. Trainees read the case description and discuss the questions in small groups. Each group takes notes. Rapporteurs prepare to present the results to the whole group.
5. **Step 2:** reports from small group discussions – **30 minutes**. Depending on the number of the small groups, allocate a time slot for each group presentation (e.g., if there are 4 small groups, each group have 10 minutes for a presentation). Rapporteurs present the results of their group discussions.

6. **Step 3:** group discussion – **30 minutes**. The trainer moderates a reflective group discussion. The trainer writes the solutions suggested during the discussion on the whiteboard and summarises them. Sample questions for reflective discussion are, e.g.:
 - *How important are intellectual property rights for scientific research and achievements?*
 - *Does the case address a relevant issue for you and researchers you are working together?*
 - *What are potential solutions at the policy level to the problem described in the case?*

PLANNING

Resources and equipment:

- Handout “HL_U7A7.1 Handout”
- Paper for taking notes during small group discussions
- Whiteboard for discussion notes
- Make space for the trainees to work in small groups

FURTHER READINGS

1. Monbiot, G. Scientific publishing is a rip-off. We fund the research - it should be free. *The Guardian*. 13.09. 2018.
<https://www.theguardian.com/commentisfree/2018/sep/13/scientific-publishing-rip-off-taxpayers-fund-research>. Accessed August 2, 2022.
2. Van Noorden, R. (2016). Alexandra Elbakyan: Paper pirate. *Nature*, 540, 512.
<https://www.nature.com/articles/540507a>
3. Vogel, G., & Kupferschmidt, K. (2017). A bold open-access push in Germany could change the future of academic publishing. *Science*, 23.
<https://www.science.org/content/article/bold-open-access-push-germany-could-change-future-academic-publishing>

Unit 8. Responsible dissemination/publication practices

Activity 8. Open access publishing and predatory practices



DESCRIPTION

This activity applies the Four Quadrant Method for case analysis on predatory practices. Trainees are asked to discuss a case in small groups and fill in the four quadrant template. Afterwards, small groups report to the whole group and continue with a casuistic reasoning and justification discussion involving the whole group.

Type of activity: case discussion (Four Quadrant Method)

Target group: students, early career researchers

Learning outcomes:

| | Learning outcomes <i>It is expected that trainees will:</i> | Indicators for their achievement <i>Trainees who have fully met the learning outcome are able to:</i> |
|---|--|---|
|  | <ul style="list-style-type: none"> – know criteria for good practice standards in open access publishing | <ul style="list-style-type: none"> – critically assess scientific results published in open access and identify predatory publishing practices |
|  | <ul style="list-style-type: none"> – apply critical thinking skills - questioning, comparing, summarizing, drawing conclusions, and defending - to case studies on ethics and integrity in OS | <ul style="list-style-type: none"> – develop reflective questions to define ethical problems in the case study – discuss cases with colleagues – justify a personal position on the case |

PROCEDURE

1. Introduce the activity, its aim and, briefly, the procedure of the Four Quadrant Method².
2. Print out the case description (file "HU_U8A8 Handout") for each trainee.

² Detailed description of the modified Four Quadrant Method for case analysis is provided by the EnTIRE project: Armond A.C. et al. (2019). D.5.3 Delivery of the entire set of case deliberation methods and case analyses as input for the platform, pp. 98-102. Available: <https://ec.europa.eu/research/participants/documents/downloadPublic?documentIds=080166e5c3a7e938&appId=PPGMS>

3. Ask trainees to split in small groups (3-4 trainees in a group) and to choose a rapporteur - a group member who will report results of the small group discussion to the whole group.
4. **Step 1.** Initial perception – **20 minutes**. Trainees read the case and in small groups discuss some general questions to identify relevant aspects of the case:
 - *What are the ethical issues at stake in this case?*
 - *Who are the stakeholders?*
 - *How should stakeholders react to this case?*
 - *What should/can stakeholders do to prevent such cases?*
5. **Step 2.** The Four Quadrant Analysis – **20 minutes**. Each group fills in the four quadrant table included in the file "HU_U8A8 Handout".

| | |
|--|---|
| I. Relevant Facts: What are the most relevant facts concerning the situation? | II. Uncertainties: Which features of the situation are uncertain, lacking in clarity, or controversial? |
| III. Courses of Action: What are the practically available options for providing a solution to the case (how to react to the case and how to prevent such cases in the future)? | IV. Contextual Features: What legal, financial and institutional policies and regulations apply to the case? |

6. **Step 3.** Reports from small groups – **20 minutes**. The small groups report the results of the Four Quadrant Analysis to the whole group.
7. **Step 4.** Casuistic Reasoning and Justification – **30 minutes**. The trainer moderates the whole group discussion on the following questions:
 - *What is at issue? What is the major ethical issue at the case?*
 - *Do you know other cases like this one?*
 - *Why do academics publish their research in a predatory journal or books published by predatory publishers? What are the main factors that motivate such a practice? What are negative consequences of such a practice? What policies might minimise predatory publishing practices?*
 - *How should stakeholders react to cases like this?*

PLANNING

Resources and equipment:

- Handout “HU_U8A8 Handout”
- Make space for the trainees to work in small groups

FURTHER READINGS

1. Kurt, S. (2018). Why do authors publish in predatory journals?. *Learned Publishing*, 31(2), 141-147. doi: [10.1002/leap.1150](https://doi.org/10.1002/leap.1150)

