

Researchers follow their quest in a careful and well-considered manner!

(cf. ECoC 2017, p.5)

Description and background

This learning unit:

Introduces citizens and future scientists to research and to the processes required to produce reliable research results

Enables an understanding and usage of research results in our knowledge-based society

Challenges future researchers to listen and speak up, as well as to explain and be able to justify research norms

Stresses how important the responsible conduct of research is for society

Role Model

Keywords

This unit has been prepared for non-disciplinary learning groups.

Learning Objectives

- 1** *Describe criteria for research procedures*
- 2** *Listen actively about how to do research*
- 3** *Argue in favour of the importance of reliable research results for both science and society*

Learning Stages

- 1** *Introduce the topic*
- 2** *Motivate by introducing an interesting problem*
- 3** *Engage in storytelling*
- 4** *Collect arguments in favour of responsible research conduct*

“Quote about Research Procedure”



1 Introduce the topic:

Homework (before the unit starts) or reading session

Read the paragraph on research procedure in “The European Code of Conduct for Research Integrity”

Discuss the meanings of any unknown words.

European Code
of Conduct for
Research Integrity:



2 Motivate by introducing an interesting problem:

Review or look up the story from LONA Science Centre (video or text). Briefly flesh out what characteristics the students (Emma, Rebecca, and David) and two researchers (Prof. Weis and the head of the institution) have.

3 Engage in storytelling

Discuss the meanings of any unknown words from the text about research procedures.

What would you advise Prof. Weis to do? Discuss with the person sitting next to you.

Collect your advice to Prof. Weis on a chalk board or flip chart. Why are these pieces of advice good?

Now imagine the story continues as follows: ‘No’, Prof. Weis thought, ‘*the test results weren’t worth it. I won’t give up my career for that.*’ She quickly walked down the hall into her office, grabbed the top pile of paper and tore it up before she even thought about it. ‘*That’s it. I’ve really done it.*’ Now, she would enter the results that her boss wanted. ‘*I want to stay at this insitution*’, she told herself. That was her justification.

Build groups of 3-4 persons and continue the story, this time following basic values and norms of conduct that speak in favour of careful and well-considered research. Fill the story with sentences that argue in favour of good research procedures.

Read some of your stories aloud.



What is research?

Research is a quest for knowledge that is conducted in a way that is systematic, calculated, considered, well planned, thought out in advance, etc. Researchers...

...discover and design things along the way as they work

...plan their research thoughtfully

...gather information and analyse it to better understand it

...publish their results and disseminate their knowledge.

Progress in society is often driven by research. Think of space travel, penicillin, de-escalation strategies, smart homes, etc.

4 Collect arguments for responsible research conduct:

Come together in pairs and ask each other the following questions:

A: What might happen if the results that Prof. Weis cheated on get published?

B: What might happen if Prof. Weis publishes the real results?

A: Do you think it is important for society that Prof. Weis publishes honest research results? Explain why (or why not).

B: How can Prof. Weis argue that research should be taken seriously?

Collect the answers on a chalk board or flipchart.

Compare the story in which Prof. Weis destroys the original test results and plans to enter falsified results with the ones you wrote.

Which of those stories stands for careful and well-considered research, and why?

What does it take for researchers to do research in a careful and well-considered way?

