

TASKS



FOR

CRITICAL

THINKING

01A-KD: SHAPING THOUGHTS

RELEVANCE OF MODES OF THINKING

Take notes regarding the questions:

Why are modes of thinking relevant in the context of critical thinking?

What significance do the aforementioned modes of thinking - question, assumption, opinion, assertion, and argument - have in a factual discussion?

01B-KD: SHAPING THOUGHTS

CONNECTING THOUGHTS

Read the introduction and discussion section of the article, highlight the connectors, and note down the relationship between the linked ideas that the connectors indicate.

Asheley R. Landrum, Alex Olshansky & Othello Richards (2021). **Differential susceptibility to misleading flat earth arguments on Youtube**, Media Psychology, 24:1, 136-165, DOI: 10.1080/15213269.2019.1669461

01C-KD: SHAPING THOUGHTS

HOW TO IDENTIFY ARGUMENTS

Watch the linked YouTube video “Flat Earthers vs Scientists: Can We Trust Science? | Middle Ground” up to approximately minute 9:25. While watching the video, take notes on the questions below.

Which arguments can you identify?

How do the participants justify their respective positions?

How do the participants justify their respective positions?

What observations can you make about the strength and quality of the arguments?

01D-KD: SHAPING THOUGHTS

RECOGNIZING & FORMULATING ARGUMENTS

(TANDEM EXERCISE)

PART 1:

Select one of the provided texts and identify the arguments. Highlight the different elements of reasoning in the text, using the schema of academic argumentation presented in the video as your point of reference.

Part 2:

Together with your tandem partner, formulate three pro and three con arguments on one of the topics from the list, following the presented schema of argumentation.

Topics:

- Should gender-inclusive language be used as a general principle?
- Should there be an unconditional basic income?
- Should the four-day work week be introduced?
- Should there be a mandatory COVID-19 vaccination policy?
- Should private ownership of firearms be prohibited?
- Should the possession of cannabis be legalized?
- Should the minimum voting age be lowered to 16?
- Should prostitution be prohibited?
- Should the biannual clock change (daylight saving time) be abolished?

PRO

PRO

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CONTRA

02A-KD: OBSTACLES TO CRITICAL THINKING

EXTERNAL CONDITIONS

Please note which external conditions, in your opinion (e.g., societal trends), hinder critical thinking and explain why. (10 minutes)

02B-KD: OBSTACLES TO CRITICAL THINKING

LOGICAL FALLACIES

As you have learned, logical fallacies are quite common. So, let's be honest: briefly describe situations in which you tend to commit logical fallacies, and reflect on why you are particularly prone to them in those contexts.

(10 minutes)

02C-KD: OBSTACLES TO CRITICAL THINKING

DISCRIMINATION AGAINST MINORITIES

On two to three pages, explain the phenomenon of minority discrimination on the basis of the logical fallacies and cognitive biases discussed so far. First, identify individually the fallacies and biases that you consider relevant to this phenomenon. Then, explain how these fallacies and biases operate in relation to the phenomenon of minority discrimination. Do not worry - you are not expected to develop a fully rigorous scientific theory.

(max. 120 minutes)

Collecting cognitive biases and logical fallacies:

In two to three pages, provide an explanation of the phenomenon of minority discrimination, drawing on the logical fallacies and cognitive biases you have identified.

Page 1

03A-KD: NUMBERS, DATA – FACTS? PART 1

IT'S FACT THAT...

Reflect:

What is required for you to be truly convinced of a particular state of affairs?

When you want to be absolutely certain that something is the way it appears to be – and not otherwise – how do you go about it?

03B-KD: NUMBERS, DATA – FACTS? PART 1

SCIENCE – OR NOT?

Read the following article (freely available online for university students) up to the middle of page three (p. 559). Answer the questions provided below in writing.

Somerville, J. (1941). **Umbrellaology, or, Methodology in Social Science.** *Philosophy of Science*, 8(4), 557-566. <http://www.jstor.org/stable/184514>

Do you agree with the author of the letter – do you consider “Umbrellaology” a science? What arguments support this view? What arguments speak against it?

What are the similarities and differences between Umbrellaology and your own academic discipline?

03C-KD: NUMBERS, DATA – FACTS? PART 1

QUALITY CRITERIA IN EMPIRICAL RESEARCH

Choose a research article and highlight, preferably using different colors, the parts of the text where information can be found that allows conclusions to be drawn about the...

- ... Objectivity (quantitative) or Intersubjectivity (qualitative)
- ... Validity (quantitative) or Transparency (qualitative)
- ... Reliability (quantitative) or Transferability (qualitative)

... of the research project.

Depending on the length of the article, take approximately 25 - 30 minutes for this task.

03D-KD: NUMBERS, DATA – FACTS? PART 2

WHAT IS THE PURPOSE OF STATISTICS?

Reflect:

In your understanding, what is the purpose and function of statistics?

What types of information can be represented more effectively through statistical methods than through other forms of presentation? What types of information are less well suited to statistical representation?

03E-KD: NUMBERS, DATA – FACTS? PART 2

MISLEADING GRAPHS

Access the freely available online article provided below. Do not read the article itself at first; instead, focus solely on the examples of misleading data visualizations. After answering the accompanying questions, consult the authors' explanatory comments located beneath each figure for clarification.

Engledowl, C. & Weiland, T. (2021) **Data (Mis)representation and COVID-19: Leveraging Misleading Data Visualizations For Developing Statistical Literacy Across Grades 6–16**, Journal of Statistics and Data Science Education, DOI: 10.1080/26939169.2021.1915215

For each figure, address the following questions:

Why was this particular figure selected as a negative example?

What modifications would be necessary to improve the figure?

What possible motivation might underlie the misleading representation?

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03F-KD: NUMBERS, DATA – FACTS? PART 2

LET THE NUMBERS SPEAK I

Read the freely accessible online article provided below and respond to the corresponding questions in writing.

Paul F. Velleman (2008) **Truth, Damn Truth, and Statistics**, Journal of Statistics Education, 16:2, <https://doi.org/10.1080/10691898.2008.11889565>

What fundamental assumptions ('axioms') does the author make regarding 'truth'? Do you agree with these assumptions?

How does the author explain the widespread mistrust of statistics? Do you find this explanation convincing?

What was your most important insight gained from reading the article?

03G-KD: NUMBERS, DATA – FACTS? PART 2

LET THE NUMBERS SPEAK II

Read the article on climate change available at <https://climatechange.procon.org/>.

Then choose either the “Pro” or the “Con” side for further analysis.

Within the limits of your disciplinary expertise, evaluate three arguments or pieces of evidence presented on your chosen side by using the questions provided below.

Briefly indicate which specific argument you are referring to in each case.

Argument 1:

- Do you find the available data convincing? Why or why not?
- Could alternative conclusions be drawn from the data?
- At what point do you encounter limitations in assessing the evidence and arguments?
- How do you address these limitations?

Argument 2:

- Do you find the available data convincing? Why or why not?
- Could alternative conclusions be drawn from the data?
- At what point do you encounter limitations in assessing the evidence and arguments?
- How do you address these limitations?

Argument 3:

- Do you find the available data convincing? Why or why not?
- Could alternative conclusions be drawn from the data?
- At what point do you encounter limitations in assessing the evidence and arguments?
- How do you address these limitations?