

EXERCISE 3 - RECOGNITION AND AVOIDANCE OF LOGICAL FALLACIES



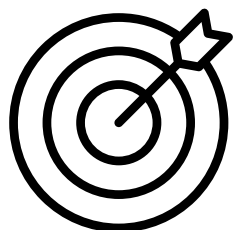
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Purpose of the exercise:

Learning to identify and avoid logical fallacies in the thinking and decision-making process.

Instructions



Presentation of logical fallacies:

The educator briefly discusses the most common logical fallacies, such as:



Ad hominem fallacy - attacking the person instead of addressing the argument.



The vicious circle (petitio principii) - assuming the truth of what is to be proven.



The false dilemma fallacy - presenting only two options when there are more possibilities.



Post hoc ergo propter hoc - assuming that if something came after something, it was caused by it.



Group exercise:

Participants are divided into small groups and given a set of short scenarios (each scenario contains a logical fallacy related to green technologies or environmental protection). The group's task is:



To identify a logical error.



To discuss how this error could affect decisions.



To suggest ways of avoiding this error.



Presentation of results:

Each group presents its scenario, the identified error and how to avoid it. The educator leads a discussion on the importance of avoiding these mistakes in professional practice.

Duration



10 minutes for discussion of logical fallacies.



20 minutes for group work.



20 minutes for presentations and discussion.

Materials

- A set of scenarios containing logical fallacies.
- Flipcharts or whiteboards for recording group results.



SCENARIO I

"Solar energy is the only way"

The company plans to invest in renewable energy sources. During the meeting, the director states: "If we really want to go green, we need to invest exclusively in solar energy. Other forms of renewable energy are simply a waste of time."

Tasks for the group

→ Identify the logical fallacy

→ Discuss how this error could affect decisions

→ Suggest how to avoid this mistake

SCENARIO I

"Solar energy is the only way"

The company plans to invest in renewable energy sources. During the meeting, the director states: "If we really want to go green, we need to invest exclusively in solar energy. Other forms of renewable energy are simply a waste of time."

Tasks for the group

→ Identify the logical fallacy

In this scenario, there is the fallacy of the false dilemma (presenting only two options: solar energy or no ecology, when there are other options).

→ Discuss how this error could affect decisions

This error can limit company's options by ignoring other efficient sources of renewable energy, such as wind or geothermal, which can lead to suboptimal investment decisions.

→ Suggest how to avoid this mistake

The company should carry out an analysis of all available sources of renewable energy, consider their advantages and disadvantages and invest in a mix of these sources to achieve a sustainable and optimal result.

SCENARIO II

Bioplastic is always better

During a discussion on waste reduction, one staff member says: "Bioplastic is better for the environment than traditional plastic, so we should switch completely to bioplastic in all our products."

Tasks for the group

→ Identify the logical fallacy

→ Discuss how this error could affect decisions

→ Suggest ways to avoid this mistake

SCENARIO II

Bioplastic is always better

During a discussion on waste reduction, one staff member says: "Bioplastic is better for the environment than traditional plastic, so we should switch completely to bioplastic in all our products."

Tasks for the group

→ Identify the logical fallacy

In this scenario, there is an error of petitio principii (vicious circle) because the claim assumes that the bioplastic is better without considering the context or evidence.

→ Discuss how this error could affect decisions

The assumption that bioplastics are always better can lead to ill-considered decisions that ignore the potential disadvantages of bioplastics, such as production costs, CO2 emissions or environmental degradation.

→ Suggest ways to avoid this mistake

Before making a decision, the company should carry out comparative studies on the environmental impact of different materials and only on this basis make an informed choice.

SCENARIO III

The climate crisis has caused a pandemic

At climate change meeting, manager says: "The COVID-19 pandemic erupted shortly after record global temperatures were recorded. This is evidence that the climate crisis is directly responsible for the pandemic."

Tasks for the group

→ Identify the logical fallacy:

→ Discuss how this error could affect decisions:

→ Suggest ways to avoid this mistake:

SCENARIO III

The climate crisis has caused a pandemic

At climate change meeting, manager says: "The COVID-19 pandemic erupted shortly after record global temperatures were recorded. This is evidence that the climate crisis is directly responsible for the pandemic."

Tasks for the group

➔ Identify the logical fallacy:

In this scenario, there is a post hoc ergo propter hoc error, i.e. the assumption that one event caused the other simply because it occurred afterwards.

➔ Discuss how this error could affect decisions:

Identifying the climate crisis as the direct cause of a pandemic without solid evidence can lead to false conclusions and decisions that do not address real health or environmental problems.

➔ Suggest ways to avoid this mistake:

The company should base its decisions on scientific evidence and analysis rather than simple correlations. It is also worth working with experts to better understand cause-and-effect relationships.

SCENARIO IV

Ecology expert lacks business knowledge

At a sustainability strategy meeting, one director says: " This environmental expert we invited may be an environmental specialist, but he doesn't understand our business. There is no point in listening to his advice."

Tasks for the group

→ Identify the logical fallacy:

→ Discuss how this error could affect decisions:

→ Suggest ways to avoid this mistake:

SCENARIO IV

Ecology expert lacks business knowledge

At a sustainability strategy meeting, one director says: " This environmental expert we invited may be an environmental specialist, but he doesn't understand our business. There is no point in listening to his advice."

Tasks for the group

→ Identify the logical fallacy:

In this scenario, there is an ad hominem fallacy, i.e. attacking the person instead of addressing their arguments.

→ Discuss how this error could affect decisions:

Ignoring an expert's advice because of an ad hominem attack can lead to the loss of valuable information and strategies that could contribute to the sustainability of the company.

→ Suggest ways to avoid this mistake:

The company should judge the arguments presented on their merits rather than personal feelings towards the person presenting them. It is also important that the team has an open mind to a variety of perspectives.

Instructions for the educator

- ➔ Before the exercise begins, make sure participants have a basic understanding of logical fallacies. This can be achieved through a short presentation or by handing out reading material before the class - use the presentation.
- ➔ Introduce participants to the purpose of the exercise and explain why recognising logical fallacies is important in the context of green technology and environmental decision-making.
- ➔ Use examples from everyday life or current events to illustrate the logical fallacies discussed.
- ➔ Encourage participants to ask questions and share their own experience of these mistakes.
- ➔ Divide participants into four groups and distribute one of the prepared scenarios to each group.
- ➔ Explain that they have 20 minutes to identify a logical fallacy, discuss its potential consequences and suggest a way to avoid it.
- ➔ When the time is up, ask each group to present their results.
- ➔ After each presentation, lead a short discussion asking other participants for their opinion and whether they agree with the conclusions presented by the group.
- ➔ Summarise the main conclusions of the exercise, highlighting how avoiding logical fallacies can improve the quality of your decisions.
- ➔ Encourage participants to reflect on how they can apply the knowledge they have gained in their professional work.