



PROGRAM SUPPORT NOTES

Critical Thinking Evidence

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For Teachers

Introduction

In this program, students are introduced to some key ideas underpinning critical thinking. An excellent case study is presented to demonstrate the importance of the way in which evidence is used to develop and support an argument. Using everyday examples, the presenter illustrates ways in which evidence doesn't simply speak for itself. In this way, the program challenges students to look deeper into theoretical evidence, to find out whether or not it stands up to scrutiny. Students will gain an excellent introduction to the study of critical thinking and how its techniques may be applied to constructing persuasive arguments.

Timeline

00:00:00	00:08:09	Evidence in argument – key ideas
00:00:00	00:07:21	Case study – the case against zoos
00:00:00	00:09:27	Case study – analysis

Recommended Resources

- <http://academic.cuesta.edu/acasupp/as/403.htm>
- http://www.ukskeptics.com/critical_thinking.php
- <http://www.epistemelinks.com/main/FunAndHumor.aspx?TopiCode=Reas>
- Fisher, A. *Critical thinking: an introduction*, Cambridge University Press, 2001.
- Phelan, P. and Reynolds, P. J. *Argument and evidence: critical analysis for the social sciences*, Routledge, 1996.

Student Worksheet

Initiate Prior Learning

1. In critical thinking, the nature of evidence is very important. List three types of evidence you might be presented with in a documentary about a particular topic – for example, youth risk-taking behaviour.

2. Which of these types most easily convince you of the truth of an argument?

3. Discuss some ways in which statistical evidence (such as percentages or comparative rates) can be manipulated in order to lend support to an argument that may be flawed.

Active Viewing Guide

Evidence in argument – key ideas

1. What is the most important consideration when we are presented with evidence in support of an argument?

2. What advantage do percentages have when using them as evidence?

3. What is “inference”?

4. How can we ensure that we achieve a balance between evidence and inference?

5. What trap can we fall into when considering evidence given as rates, such as death rates in Bournemouth, for example?

Critical Thinking Evidence

6. How was the graph used to reveal that the fall in deaths from tuberculosis was not solely related to medical advancements?

7. What were the other contributing factors to the fall in tuberculosis cases?

Case study – the case against zoos

8. Discuss with your class the use of evidence made to construct the case against zoos.

Case study – analysis

9. List the specific ways in which the presenter of the argument has misused evidence to construct this argument.

Extension Activities

Go back and view the “*Evidence in argument – key ideas*” chapter of the program. Consider how the evidence is used in the speed camera example.

1. Trace the ways in which the evidence was used to support the argument that speed cameras don't work.

2. Summarise an alternative explanation for the evidence presented that does not support this argument.

3. What other facts do we need to know in order to make a valid and considered judgment about the argument being presented? List the missing facts.

Suggested Student Responses

Active Viewing Guide

Evidence in argument – key ideas

1. What is the most important consideration when we are presented with evidence in support of an argument?
What use has the writer made of the evidence?
2. What advantage do percentages have when using them as evidence?
They can help us show perspective in relation to the bigger picture.
3. What is “inference”?
The conclusions we draw from the evidence.
4. How can we ensure that we achieve a balance between evidence and inference?
Don't put too much weight on a single fact or series of figures that may not tell the whole story on their own.
5. What trap can we fall into when considering evidence given as rates, such as death rates in Bournemouth, for example?
Seemingly high rates may even themselves out when we apply certain other facts. In the Bournemouth example, looking at age-specific mortality rates evens out the death rates to more normal levels.
6. How was the graph used to reveal that the fall in deaths from tuberculosis was not solely related to medical advancements?
The creator of the graph simply extended the period of time under investigation in the study. Compared across a longer time frame, the effects of other factors can be seen more clearly.
7. What were the other contributing factors to the fall in tuberculosis cases?
Better diets, better general living conditions, climatic changes.

Case study – the case against zoos

8. Discuss with your class the use of evidence made to construct the case against zoos.
Discussion only

Case study – analysis

9. List the specific ways in which the presenter of the argument has misused evidence to construct this argument.
Moving/shifting the focus of the argument
Using a long term study that has little relevance because of changes over the years
Generalising from one species to another without logical reason
Contradiction of own argument
Making inferences that represent unreasonable leaps in logic
Using evidence to prove a single instance that does not translate to all zoos or all species
Failure to account for flaws in argument
Failure to provide alternative explanations of the evidence
Selective use of evidence

Extension Activities

Go back and view the “*Evidence in argument – key ideas*” chapter of the program. Consider how the evidence is used in the speed camera example.

1. Trace the ways in which the evidence was used to support the argument that speed cameras don't work.

Answers will vary.

2. Summarise an alternative explanation for the evidence presented that does not support this argument.

Answers will vary.

3. What other facts do we need to know in order to make a valid and considered judgment about the argument being presented? List the missing facts.

Changes to the operating parameters of speed cameras

Changes in the number of drivers on the road

Changes in the ages of drivers

Changes in drug or alcohol related incidents