EVALUATING EVIDENCES

Assessing Credibility of Evidence

Welcome to the heart of critical reasoning - assessing evidence. Remember: your success in Thinking Skills hinges not just on understanding arguments, but on **evaluating the evidence behind them.**

Let's deep dive into the tools that will sharpen your analytical skills.

Understanding the Nature of Evidence

Evidence is the cornerstone of any argument.

Evidence can come in many forms, to support an argument.

In the first chapter, we have briefly discussed direct vs indirect evidence and strong vs weak evidence.

Let's now explore evidence in greater detail!

Key Consideration:

Always ask, "What is the nature of this evidence?"

Is it:

1. empirical (based on observation or experience), or
2. anecdotal (based on personal stories), or
3. logical (based on reasoning)

Evaluating Source Reliability

Every piece of evidence has a **source**.

The **credibility (believability) of this source** can make or break the argument.

1. **Expertise and Bias:** Is the source an expert in the field? Do they have a potential bias that might affect their interpretation?

Example: A study on the health benefits of sugar funded by Cadbury Chocolate is likely to be biased.

2. **Recency and Relevance:** Is the evidence current and directly relevant to the argument?

Example: A research study conducted last month is more recent than a decades-old study from 1940.

Assessing the Quality of Data

Data may seem like solid evidence, but that is not always the case. The quality of data depends on sample size & selection, and whether or not there are any biases.

Sample Size and Selection: Larger, more diverse samples give more reliable results.

Example: A survey on teen opinions drawn from 10,000 students across Australia provides stronger evidence than one from 50 students in a single school.

Consistency and Corroboration

Consistent evidence aligns with itself and other known facts.

Corroborated evidence is supported by independent (unbiased) sources.

Example: The theory of climate change is supported by consistent data from various scientific disciplines and corroborated by independent researchers worldwide.

Plausibility

Plausibility refers to how believable a claim is based on known facts.

Plausibility Check: If a claim goes against established scientific understanding without strong new evidence, be skeptical.

Example: A claim that humans can photosynthesize like plants is implausible without extraordinary evidence.

Weighing Conflicting Evidence

Often, you'll encounter arguments with evidence that seems to conflict. Here's how to handle it:

Compare the Quality: Not all evidence is equal. Evaluate each piece's reliability and relevance.

Example: During the Australian bushfires in 2019-2020, conflicting reports emerged about their cause.

Was it climate change or arson, which is people who purposely light things on fire?
Yet weighing the evidence – considering the extensive scientific analyses of climate patterns versus isolated incidents of arsonage – helped expose that climate change played a much more significant role.

Seek Balance: Sometimes, both sides of an argument have merit. Recognise this complexity and avoid black-and-white thinking.

Key Takeaways

Let's put theory into practice.

Next time, when you read a news article, study or anything interesting in the Internet, consider the following:

- **Identify the Source:** Who wrote it? What's their background?
- **Evaluate the Evidence:** What data or research is cited? Are there any logical fallacies?
- **Look for Corroboration:** Do other reliable sources support this information?
- **Check Consistency:** Are the claims consistent with what you know from other credible sources?

Assessing Representativeness of Evidence

Now let's tackle an important concept that comes up in Thinking Skills questions related to studies and surveys: **representativeness**.

What is Representativeness?

Representativeness determines how well a sample or a piece of evidence mirrors the larger group or phenomenon it claims to represent.

Example: Imagine you are conducting a survey to determine the most popular lunch item in the school. If you only ask students from one class, you might conclude that pizza is the favourite, but what if students in other classes prefer sandwiches or salads? A strong, well- executed, **representative** survey would ask students from **all classe**s to get a true picture of school-wide preferences

A **representative sample** accurately reflects the **diversity** and **characteristics of the population from which it's drawn, providing a miniature yet accurate portrayal of the whole.**

A representative sample is like taking a small handful of M&Ms from a big bag that has every colour; if your handful includes all the colours in the bag, it accurately represents the whole bag in a mini version. This small selection shows what the entire bag is like, just on a smaller scale. In simple terms, creating a representative sample is like creating a mini, but accurate, version of a much bigger picture!