

Induction vs. Deduction

In writing, **argument** is used in an attempt to convince the reader of the truth or falsity of some proposal or thesis. Two of the methods used are **induction** and **deduction**.

Induction: A process of reasoning (arguing) which infers a general conclusion based on individual cases, examples, specific bits of evidence, and other specific types of premises.

Example: In Chicago last month, a nine-year-old boy died of an asthma attack while waiting for emergency aid. After their ambulance was pelted by rocks in an earlier incident, city paramedics wouldn't risk entering the Dearborn Homes Project (where the boy lived) without a police escort.

Thus, based on this example, one could inductively reason that the nine-year-old boy died as a result of having to wait for emergency treatment.

Guidelines for logical and valid induction:

1. When a body of evidence is being evaluated, the conclusion about that evidence that is the *simplest* but still covers all the facts is the best conclusion.
2. The evidence needs to be well-known and understood.
3. The evidence needs to be sufficient. When generalizing from a sample to an entire population, make sure the sample is large enough to show a real pattern.
4. The evidence needs to be representative. It should be typical of the entire population being generalized.

Deduction: A process of reasoning that starts with a general truth, applies that truth to a specific case (resulting in a second piece of evidence), and from those two pieces of evidence (premises), draws a specific conclusion about the specific case.

Example: Free access to public education is a key factor in the success of industrialized nations like the United States. (major premise)
India is working to become a successful, industrialized nation. (specific case)
Therefore, India should provide free access to public education for its citizens. (conclusion)

Thus, deduction is an argument in which the conclusion is said to follow necessarily from the premise.

Guidelines for logical and valid deduction:

1. All premises must be true.
2. All expressions used in the premises must be clearly and consistently defined.
3. The first idea of the major premise must reappear in some form as the second idea in the specific case.
4. No valid deductive argument can have two negative premises.
5. No new idea can be introduced in the conclusion.