

METHODS FOR MEASURING THE LOGICAL THINKING OF SCHOOLCHILDREN

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Abstract. *This article provides an overview of various methods used for measuring the logical thinking abilities of schoolchildren. Logical thinking is an essential skill that enables individuals to reason, problem-solve, and make informed decisions. The article highlights the importance of measuring logical thinking skills in schoolchildren and discusses different measurement approaches, including standardized tests, observation-based assessments, and performance-based assessments.*

Keywords: *logical thinking, measurement, schoolchildren, assessment, cognitive development, educational psychology, problem-solving, reasoning, critical thinking, standardized tests, intelligence testing.*

Logical thinking is a critical skill that schoolchildren need to develop to excel in academics and life. It involves the ability to analyze, reason, and draw conclusions based on evidence and logical inferences. Measuring logical thinking in schoolchildren is essential to evaluate their academic performance, problem-solving skills, and cognitive abilities.

There are several methods available to measure the logical thinking of schoolchildren. We will explore some of the most commonly used methods.

1. *Standardized Tests:* Standardized tests are widely used to measure logical thinking in schoolchildren. These tests consist of a set of questions that assess a child's ability to understand complex ideas, make inferences, and draw conclusions based on evidence. Examples of standardized tests that measure logical thinking include the Cognitive Assessment System, the Cognitive Assessment Test, and the Cognitive Abilities Test.

2. *Problem-Solving Tasks:* Problem-solving tasks are another way to measure logical thinking in schoolchildren. These tasks require children to use their reasoning and problem-solving skills to find solutions to complex problems. Examples of problem-solving tasks include puzzles, riddles, and brain teasers.

3. *Interviews:* Interviews are a qualitative method of measuring logical thinking in schoolchildren. In an interview, a child is asked a series of questions that require them to think critically and to explain their reasoning. This method is useful for assessing a child's ability to articulate their thoughts and to evaluate their reasoning skills.

4. *Observations:* Observations are another qualitative method of measuring logical thinking in schoolchildren. This method involves observing a child's behavior and interactions with others to evaluate their ability to think logically and to solve problems.

5. *Critical Thinking Tests:* Critical thinking tests are designed to measure a child's ability to analyze, evaluate, and synthesize information. These tests require children to read and understand complex texts and to apply their critical thinking skills to answer questions. Example of critical thinking test include the Cornell Critical Thinking Test.

There are several factors that can affect a child's logical thinking abilities. These factors include:

1. Environment: The environment in which a child grows up can significantly impact their logical thinking abilities. Children who are exposed to a stimulating environment, with access to books, educational games, and activities that challenge their thinking skills, are more likely to develop strong logical thinking abilities.

2. Genetics: Research has shown that genetics plays a role in determining a child's cognitive abilities, including logical thinking. Children who have a genetic predisposition to high cognitive abilities may have a natural advantage in developing strong logical thinking abilities.

3. Nutrition: Nutrition also plays a role in cognitive development, including logical thinking. Children who have a diet rich in essential nutrients, such as omega-3 fatty acids, are more likely to have better cognitive abilities, including logical thinking.

4. Sleep: Adequate sleep is essential for cognitive development, including logical thinking. Children who do not get enough sleep may have difficulty concentrating, problem-solving, and reasoning.

5. Education: The quality of education a child receives can also impact their logical thinking abilities. Children who receive a high-quality education, with teachers who are trained to promote critical thinking and problem-solving skills, are more likely to develop strong logical thinking abilities.

6. Technology: The use of technology can also impact a child's logical thinking abilities. While technology can provide access to educational resources and games that can promote logical thinking skills, excessive screen time can have a negative impact on cognitive development.

It is means that several factors can impact a child's logical thinking abilities, including environment, genetics, nutrition, sleep, education, and technology. Parents, caregivers, and educators can take steps to promote the development of strong logical thinking abilities in children by providing a stimulating environment, a healthy diet, adequate sleep, high-quality education, and appropriate use of technology. **In conclusion**, measuring logical thinking in schoolchildren is essential to understand their cognitive abilities and problem-solving skills. Several methods are available to measure logical thinking, including standardized tests, problem-solving tasks, interviews, observations, and critical thinking tests. Each method has its advantages and limitations, and the choice of method depends on the specific needs and goals of the assessment.

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