Critical thinking

Definition of the skill

Critical thinking is the ability to reason objectively and logically, analyse and evaluate information, consider different perspectives and draw conclusions based on evidence and logic. It enables us to evaluate and assess information in an objective and systematic way.

Critical thinking is thus a dual skill:

It includes both 1. the ability to critically examine and evaluate information, and 2. the ability to think independently and creatively about complex problems and issues.

Critical thinking also helps form well-reasoned opinions and positions and ensures that we do not simply believe everything we hear, see, feel or read.

Importance of the skill for lifelong well-being

- Critical thinking is an essential skill in almost every aspect of life, requiring the ability to think independently and logically. It goes beyond simply having an opinion or point of view; it includes the ability to substantiate and defend that perspective.
- Critical thinking is therefore essential in our increasingly complex and rapidly changing world. It is the ability to think in an active and reflective way, to analyse and evaluate problems in a systematic way and thus to arrive at informed decisions and opinions.
- So critical thinking is a fundamental and overarching skill that should be promoted in all aspects of life. It helps people make more informed and responsible choices and contributes to a critical and tolerant society. Developing critical thinking as a cross-cutting skill is thus crucial for individuals and society: critical thinking is becoming increasingly important because our world is full of data and we have to know how to distinguish and work properly with them.

Manifestation and development of this skill in ages 6-10

For children aged 6 to 7:

- Asking questions: Children ask a lot of ‘Why?’ and ‘How?’ questions. This shows their curiosity and desire to understand things. For example, they may ask, ‘Why is the sky blue?’.
- Active participation: They are often actively involved in conversations, asking curious questions and wanting to provide their own answers.

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- Spontaneous thinking: Children can make surprising connections while playing or telling stories. For example, when reading a story, they can immediately explain what they think happens next.
- Concrete thinking: They tend to think in concrete terms and struggle with abstract concepts. Their critical skills often focus on what they can observe directly.
- Cause-and-effect: They begin to understand that actions have consequences. For example, they may come up with an example such as: 'If I don't clean up my toys, I won't be able to play with them anymore.'
- Story comprehension and analysis: They can retell simple stories and ask questions about characters' choices. For example, 'Why did the hero decide to run away?'
- Simple statements: They can express their thoughts, but often in simple ways. For example, 'I like this book because the pictures are beautiful.'
- Personal preferences: Opinions are strongly based on personal experiences and preferences, without much argumentation. They can say what they like or dislike, but do not yet explain many reasons.
- Creative thinking: While playing, they often invent new game rules or ways to solve a problem, such as how to overcome an obstacle in a game. This promotes their ability to think creatively and explore alternatives.

For children aged 8 to 10:

- Active discussion: They participate more often in group discussions and debates, not only expressing but also defending their ideas and opinions.
- Collaboration: They work better together on projects, learn to listen to each other and develop respect for different points of view.
- Complex questions: They start asking deeper questions about topics, such as 'What if...?' This shows their ability to consider scenarios and analyse possible outcomes.
- Forming opinions and arguing: Children can support their opinions about books, films or events with reasons. For example, when describing a book, they can explain which aspects they liked best and why.
- Logical reasoning: Children begin to make more logical connections and understand more abstract concepts. For example, they can think about how certain choices have long-term consequences.
- Hypothetical thinking: They are able to fantasise about 'what if' scenarios, which helps them explore possible outcomes and solutions.
- Problem-solving thinking: They can think of multiple solutions to a problem, such as how to resolve a conflict with a friend, and can weigh up the pros and cons of each solution before deciding what to do.
- Information analysis: They learn to compare and evaluate information, such as using different sources for a school project. They can ask questions such as 'Is this correct?' or 'How do we know this is correct?'.

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- Critical evaluation: Children begin to look at information more critically. They may ask questions like, 'Is this even true?' or 'What could someone else say about this?' This shows that they are considering different perspectives.
- Simple reflection and evaluation: After group activities or projects, they can reflect on what went well and what could be improved. They can formulate answers like, 'I liked that we worked together, but we should have started our task earlier.'

Observation parameters for establishing class level

Level 1 (Beginner): Children ask simple questions such as 'Why?' and 'How?'. They understand basic concepts of cause and effect and can express personal preferences, but without deep argumentation.
Asking questions and Research: Asks simple questions. Analysis and Interpretation: Identifies basic facts. Evaluation of Arguments: Difficulty distinguishing between opinion and fact. Reasoning and Problem-Solving: Proposes basic solutions. Reflects on Thinking Process: Reflects rarely.

Level 2 (Semi-advanced): Children begin to ask more complex questions and can support their opinions with reasons. They are able to see problems from different perspectives and collaborate on group projects, actively participating in discussions.
Asking questions and Research: Asks relevant and complex questions. Analysis and Interpretation: Analyses information, makes connections. Evaluation of Arguments: Evaluates simple arguments. Reasoning and Problem-Solving: Proposes multiple solutions with rationale. Reflects on Thinking Process: Reflects occasionally.

Level 3 (Expert): Children can reason logically and consider hypothetical scenarios. They formulate well-reasoned opinions and critically evaluate information, effectively using arguments and counterarguments in a discussion.

Asking questions and Research: Formulates in-depth, open-ended questions. Analysis and Interpretation: Critically analyses complex information. Evaluation of Arguments: Critically evaluates complex arguments. Reasoning and Problem-Solving: Formulates well-reasoned, innovative solutions. Reflects on Thinking Process: Reflects consistently on thinking process.

Interconnections with other skills

- Curiosity: Drives critical thinking by encouraging questions, exploration, and the search for explanations.
- Openness: Supports critical thinking by welcoming new ideas and different perspectives.
- Doubt (scepticism): Promotes careful evaluation of information instead of accepting it at face value.
- Self-awareness: Helps identify personal biases, leading to more objective analysis.
- Questioning: Encourages deeper inquiry, clarification, and testing of information.

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- Analysis and evaluation: Breaks down, compares, and assesses information to separate facts from opinions.
- Reasoning: Links ideas logically and helps draw consistent conclusions.
- Reflection: Promotes reviewing and improving one's own reasoning process.
- Problem-solving: Applies critical thinking to analyse problems and evaluate possible solutions.
- Decision-making: Uses critical thinking to make thoughtful, well-informed choices.
- Creativity: Generates original ideas, which critical thinking evaluates and refines.

Didactical tips for teachers

- Ask open-ended questions: e.g. 'Why do you think that?'
- Use thinking schemes: "what, why, how?" or "advantage and disadvantage"
- Have students work on problem-solving activities: individually or in small/large groups?
- Organise discussions on recognisable topics including both for and against arguments
- Encourage reflection on choices and outcomes
- Analyse stories and choices of characters
- Learn to look critically at media and information, current events
- Use games to practice logical and critical thinking: e.g. Puzzles and riddles
- Provide a safe environment for mistakes: "*Mistakes are allowed!*"
- Give room for autonomy in choices: multiple solutions to one problem
- Link lesson material to real-life situations: cross-curricular working

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