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Abstract

This study aimed to review existing primary and secondary resources to make all stakeholders aware of the influence of different teaching strategies on fostering critical thinking in students. A specific criterion was set out by the researcher like the scope of the study, language, year of publication, nature of the journal, etc. The researcher searched out articles that duly fulfill the required criteria. After a review of those articles, findings explored multiple teaching strategies that may have a positive influence on students in making them critical thinkers. From this review, the most effective teaching strategies include the use of fairy tales, problem-based approach, collaborative learning, Socratic questioning, inquiry-based learning, and argument mapping, etc. The researcher suggested adopting multiple teaching strategies to enhance critical thinking skills in students.

**Keywords:** Teaching Strategies; Critical Thinking; Problem-Based Learning; Inquiry-Based Learning; Collaborative Learning

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**Title**

### Influence of Teaching Strategies in Developing Critical Thinking Skills: A Review

**Abstract**

*This study aimed to review existing primary and secondary resources to make all stakeholders aware of the influence of different teaching strategies on fostering critical thinking in students. A specific criterion was set out by the researcher like the scope of the study, language, year of publication, nature of the journal, etc. The researcher searched out articles that duly fulfill the required criteria. After a review of those articles, findings explored multiple teaching strategies that may have a positive influence on students in making them critical thinkers. From this review, the most effective teaching strategies include the use of fairy tales, problem-based approach, collaborative learning, Socratic questioning, inquiry-based learning, and argument mapping, etc. The researcher suggested adopting multiple teaching strategies to enhance critical thinking skills in students.*

**Keywords:** [Teaching Strategies](#), [Critical Thinking](#); [Problem-Based Learning](#); [Inquiry-Based Learning](#); [Collaborative Learning](#)

**Introduction**

The importance of critical thinking skills in education is increasingly recognized as a fundamental foundation for individual success in tackling future challenges. In today's era, saturated with information and technology, the capability to analyze, evaluate, and synthesize information is essential for holistic development (D'Alessio, Avolio, & Charles, 2019). Students who practice critical thinking are better equipped to balance arguments, analyze data, and take into account many

viewpoints when making judgments. Decision-making, both personal and professional, can benefit from this (Orhan, 2022).

Ismail et al., (2018) considered critical thinking as a cognitive strategy, which involves the human mind to analyze the problem at hand and find reasonable and accepted solutions. Various teaching strategies can nurture these skills among students. For instance, giving students opportunities for dialogue, especially when teachers pose questions and lead

discussions, can expose them to authentic or situated problems and examples. Additionally, mentoring is crucial. Research has shown that instructional activities that involve active learning are necessary for students to practice critical thinking skills. Specifically, rigorous and challenging performance tasks have been identified as effective methods (Smith et al., 2018).

The learning environment, both inside and outside the classroom, also plays a significant role in developing critical thinking skills in elementary school children. Ichsan (2019) suggested peers' interaction, technological usage in teaching teaching-learning process, and parents' involvement as influencing factors to enhance the critical thinking skills of children. Moreover, Ramdani et al., (2021) and Basri et al., (2019) favor problem-based learning approaches for fostering critical thinking skills in elementary school children. They were of the view that it is mandatory to introduce real-world problems or situations relevant to children to make them critical thinkers. Teachers may play their role in this regard by encouraging them to identify issues, gather necessary information, and seek logical solutions. This method is equally important in fostering essential problem-solving skills needed in everyday life. At every grade level, CT needs to be included in the curriculum material and teaching strategies in order to produce successful critical thinkers (Alsaleh, 2020).

Ennis (2000) noted that critical thinking, problem-solving, communication, and teamwork are also essential 21st-century learning abilities. Even though technology and information are used in every aspect of life in the modern period, critical thinking is still seen as an essential talent for success in the workplace, in the classroom, and in daily life. This demonstrates the value and necessity of thoughtful thought. Critical thinking skills include the ability to conceive issues and make arguments for induction, deduction, assessment, and decision-making.

Yazidi (2023) linked kids' academic achievement to critical thinking. According to him, thinking critically entails information analysis, the identification of underlying assumptions and biases, the evaluation of arguments and supporting data, and the development of well-reasoned conclusions. People are therefore more equipped to solve issues, make well-informed decisions, and interact with others in a variety of contexts. Effective communication of concepts and arguments in various contexts is another aspect of critical thinking. It gives pupils the tools they need to

handle obstacles they may face in the real world and gets them ready for real-world scenarios. Finally, it fosters independent thought and the capacity to take well-informed positions and judgments.

### The rationale of the Study

The need and importance of soft skills like critical thinking skills, problem-solving skills, creativity, etc. cannot be ignored, even in this age of science and technology. It is because of the fact that these skills help us to cope with 21<sup>st</sup>-century complexities. The need to equip students with these skills increases especially in educational settings, to make them able to deal with real-life problems. This study aiming at searching for effective teaching strategies for enhancing critical thinking skills in students may prove a benchmark for teachers and educators.

There are multiple reasons behind conducting this research. First, literature is evident on the positive relationship between critical thinking skills on the academic achievements of students. Students well-equipped with critical thinking skills, as stated by Abrami et al. (2014), are better able to process and analyze the information excreted from diverse sources and develop a strong argument on the topic at hand, which in turn positively on their academic achievement. Similarly, Facione (2020) was of the view that evidence-based sound decisions are the ultimate results of critical thinking skills. Furthermore, critical thinking skills help to enhance students' judgment and reasoning against under-discussed phenomena. This study aims to identify the most effective teaching strategies that can cultivate these skills, thereby enhancing educational outcomes and enabling individuals to distinguish between credible and non-credible sources. Furthermore, academic success is not the only advantage of his skill of critical thinking. Actually, after schooling a person has to face real life in natural settings. There, it is critical thinking which helps them to tackle real-life issues. Hence, the ability to think critically is fundamental to problem-solving, creativity, and innovation.

The current study is an effort to ease the reader by presenting the findings of multiple studies at a glance. By reviewing a wide range of studies and teaching methods, this research aims to highlight inclusive strategies that can be adapted to various educational settings. This study may prove a benchmark in providing insights into how critical thinking can be fostered in these new educational landscapes.

## Objective of the Study

The main objective of the study was to have a thorough review of the primary and secondary data about effective teaching strategies for developing critical thinking in students.

## Research Questions

The answers to the following research questions were tried to be searched out through this systematic review.

1. How would the term 'critical thinking' be defined?
2. What teaching strategies are employed by the teachers in inculcating critical thinking among students?

## Methodology

This section included the methodological approach being employed by the researcher to have this review on the topic in hand. A document analysis procedure was adopted for this review. Below are the search strategy, and inclusion and exclusion criteria for the related primary and secondary data.

### Search strategy

A systematic procedure was adopted to search the most relevant primary and secondary data for the study. To cover the latest content, a range for the years 2020-2024 was decided by the researcher. Different search databases were used to search the data. These included Google Scholar, Web of Science, and ERIC (Education Resource Information Center).

### Inclusion and Exclusion Criteria

Inclusion and exclusion criteria were decided by the researcher. Only those articles were included in the final investigation which strictly fulfills the required criteria. The inclusion criteria were based on factors like relevancy, design, language, review policy, and the range of time which was decided earlier. Below here is a brief description of the inclusion and exclusion criteria:

- The articles which were supposed to achieve the objectives of the study were included for review.
- Both qualitative and quantitative studies were included in the review.
- Only papers written in the English language were included.
- To ensure the quality and trustworthiness of the data, only peer-reviewed articles were included.

- Non-relevance, non-peer-reviewed, non-English, and non-educational context material was excluded from this study.

## Findings of the Study

The current study was an effort to search for different effective teaching strategies that may have a significant effect on the soft skills of students, particularly critical thinking skills. A comprehensive review of the latest literature was the only way to point out such effective and interactive strategies to make teachers and educators aware of their latest approach and targets in ensuring more skilled and dynamic students. Below are given some key teaching strategies and their effectiveness on students, critical thinking skills.

**Storytelling and Fairy Tales:** After doing a thorough literature analysis, Susanti (2024) found numerous useful tactics for helping primary school students strengthen their critical thinking abilities. These tactics include using fables or stories to elicit critical thinking, applying problem-based learning methodologies, using educational games to encourage problem-solving, and incorporating technology into the teaching and learning process. According to the researcher, fairy tales and stories may be used as instruments to provide issues and scenarios for examination. It has been demonstrated that using stories to pique children's interest and encourage critical thinking works well with primary school pupils. This approach involves telling the narrative to the kids first, then encouraging them to consider the moral lessons, characters, and storyline in a critical manner.

**Problem-Based Learning (PBL):** It is an admitted fact that learning strategies help teachers and educators draft their lessons for the successful development of required skills in their students. In the same way, Problem-Based learning, being the most effective learning strategy is mostly adopted by the teachers to develop critical thinking skills in their students. By adopting a Problem-based Learning strategy, students are able to solve real-life problems.

Fitriani et al. (2020) introduced another learning strategy named "Problem-Based Learning with Prediction, Observation, and Explanation (PBLPOE)". This approach was used in Biology-related courses to enhance the critical thinking skills of students. In response to the Problem-based learning approach, they believed it was an instructional approach to promote critical thinking and self-discovery of concepts. Additionally, the Predict, Observe, and Explain (POE) learning approach, based on scientific instructions

emphasizes the value and importance of examining pupils' prior knowledge. The value of prior knowledge for developing critical thinking and creativity is advocated by the constructivist philosophy of learning. Knowledge is constructed on already-known facts.

There are three stages of POE strategy Observe; Explain; and Forecast. Here, 'observing' means doing an inquiry about the problem at hand, and 'explain' refers to the present findings of previous studies. The stage 'forecast' is the stage of making predictions by comparing and contrasting the pieces of evidence. Studies demonstrate that POE is a successful strategy in fostering students' critical thinking and scientific attitudes. The students' poor ratings on nearly every facet of scientific attitudes show how much conventional learning varied from PBL, POE, and PBLPOE in terms of strengthening the students' scientific views.

**Social Interaction and Collaborative Learning:** Critical thinking is necessary in the educational setting in order for pupils to interact with and comprehend difficult ideas and concepts. It helps students to assess the reliability of sources, examine the data, and formulate well-reasoned arguments. Studies have indicated that learners who cultivate critical thinking abilities are more adept at navigating intricate academic material, exhibit superior performance on standardized assessments, and have a higher likelihood of finishing their degrees.

As part of a collaborative learning approach, Yazidi (2023) was of the view that students collaborate in pairs or small groups to solve issues, finish assignments, or have discussions about ideas. This method can be very useful for enhancing critical thinking abilities since it gives students the chance to participate in active learning, share ideas, and confront one another's viewpoints. Compared to solitary learning, group discussions, cooperative tasks, and peer interactions are more successful. Through social contact, strategies such as small group discussions with assigned tasks can develop critical thinking. In fact, scholarly literature has thoroughly examined and advocated for collaborative learning—the process of assigning and combining students to work toward a common academic goal. With this method, students with varying ability levels collaborate in small groups to complete a common

**Socratic Questioning and Inquiry-Based Learning:** Socratic inquiry is a method of raising doubts about presumptions, elucidating ideas, and unearthing facts in order to encourage critical thinking. It bears the name of the

Greek philosopher Socrates, who was renowned for guiding his pupils toward greater comprehension and insight via the application of this technique. The capacity of Socratic inquiry to assist people in analyzing and assessing both their own and other people's ideas, as stated by Phillips, (2023), makes it essential to critical thinking. Socratic inquiry may aid in the identification of biases, the clarification of concepts, and the consideration of different viewpoints by posing thought-provoking questions. It can also assist people in recognizing knowledge gaps and crafting stronger arguments.

Additionally, students actively participate in the learning process via questioning, researching, and constructing their own understanding through the use of inquiry-based learning (IBL), a teaching methodology. This method is advocated by Wahab and Terasne (2020) and it can enhance critical thinking by motivating students to reflect carefully, evaluate data, and make defensible decisions.

**Concept Mapping and Argument Mapping:** A useful visual aid for helping students arrange and convey their knowledge is concept mapping. Sharma et al. (2022) concluded from their study that critical thinking abilities including information analysis, synthesis, and evaluation are needed to create an idea map. Here, students develop connections between already known and existing knowledge which helps them grasp difficult ideas more deeply. In the end, this may help them become more adept at critical thinking.

Argument mapping is the process of visualizing arguments in order to assess their validity and determine their logical structure. Yazidi (2023) stated that students may learn to identify underlying assumptions and assess the quality of the evidence supporting a claim by employing argument mapping. Consequently, this can enhance their capacity for critical thought.

**STEM and Real-Life Problem Solving:** The first letters of the four academic disciplines—science, technology, engineering, and mathematics—form the acronym STEM. Unlike the existing conventional educational system, which teaches these four subjects discretely and independently, the STEM idea combines them in an engaging manner. The idea of reaching students with diverse interests and backgrounds is novel, although STEM itself is not a new phenomenon (Affouneh et al. 2020). Students can develop critical thinking abilities through the strategic integration of STEM activities into their schooling. The goal of STEM education is to help children acquire a variety of abilities that they will need in the

real world, including creativity, teamwork, reasoning, and thinking. Students learn about and are able to tackle real-world challenges through STEM.

**Case Study Method:** The social sciences have made extensive use of case studies, which are especially beneficial in practice-oriented fields like education, public administration, management, and social work. Although cases don't always offer easy or clear answers, they do challenge students' critical thinking skills, model professional thinking, and encourage them to use theoretical ideas to highlight real-world issues. The case study technique has several distinguishing characteristics, such as being based on real-world situations, providing documents and supporting data for analysis, and posing an open-ended topic or problem with potential solutions (Mahdi et al. [2020](#)).

**Argumentation Strategies:** Toulmin's Argument Pattern (TAP) is a commonly recognized argumentation model. A landmark work, *The Uses of Argument* by Toulmin. Many scientific educators have adopted Toulmin's, ([1958](#)) argumentation framework for use in their classrooms and student learning initiatives (Erduran and Kaya [2016](#)). Through findings from experimental research conducted at the upper secondary school level, Giri and Paily ([2020](#)) have critically examined the impact of TAP within the Think-Read-Group-Share-Reflect (TRGSR) strategy (scientific argumentation-based teaching strategy) on the development of critical thinking in the context of learning biology. They found that TAP (Toulmin's Argumentation Pattern) and scientific argumentation (TRGSR) are more effective in promoting critical thinking skills than traditional methods. Despite having different operational processes, the Think-Read-Group-Share-Reflect (TRGSR) technique was created to support constructivist and collaborative learning. Within the Think-Read-Group-Share-Reflect (TRGSR) approach, Toulmin's argument pattern (TAP) is very methodical, and the argument's components are simple to identify and evaluate for educators.

**Inquiry-Based Learning:** One type of method that requires students to think critically is inquiry-based learning, in which they create questions, conduct observations, and gather information. Additionally, the inquiry-based learning technique stimulates thinking, learning, and questioning. Wahab and Terasne ([2020](#)) were of the view that in inquiry-based learning students are given the chance to evaluate the material, consider it critically, raise questions, and gather more information in order to get a deeper grasp of it. In

essence, inquiry is a means of explaining science by offering arguments and supporting data to challenge some arbitrary assumptions and arrive at conclusions. Instructors may shape their students' abilities to solve problems, form hypotheses, and conduct experiments to the point where they produce dynamic scientists capable of posing questions like "How come?" and "What if?" Further, these scientists' mental processes are given even more logical and creative tools for deeper learning probing, in which their thinking is not only sped up but enhanced, thus making academic achievement more substantial.

One way to conceptualize inquiry is as a process of using data and observations to solve issues and provide answers to questions. Inquiry is a teaching tactic used in classrooms. According to its definition, inquiry-based learning allows teachers to assist students in understanding course material and concepts by giving them the ability to investigate a topic, gather data, and test a theory. Consequently, students will have increased opportunities to take charge of their own education, develop a more comprehensive grasp of the course material in an integrated way, and improve their critical thinking skills. Furthermore, the inquiry method places greater emphasis on learning and applying it to the development of information processing and problem-solving abilities. With the instructor serving as a learning facilitator, the method is more focused on the needs of the individual pupils.

## Conclusion and Recommendations

The study explored multiple teaching strategies that were being employed by teachers in enhancing soft skills in students, especially critical thinking skills. Effective teaching strategies that were explored as a result of this study include story-telling, collaborative and inquiry-based learning, problem-based learning, argument mapping, etc. These strategies have a positive influence on students' abilities to develop critical thinking skills. The findings also explored the active and pivotal role of teacher in this regards.

On the basis of the findings, the researcher has suggested the following recommendations for the stakeholders.

1. It is suggested that teachers adopt diverse teaching methods for teaching students. The teachers should not rely on any one method, approach, and strategy of teaching. Instead, they may adopt different methods on different occasions. His non-rigid and flexible

- attitude towards the selection of methods may keep the students active in learning.
2. The department should conduct regular workshops in order to make teachers equipped with the latest techniques of teaching. This may enhance their approaches to adopting skills related to their profession.
  3. The curriculum may also be enhanced by adding real-life problems and minimizing the gaps between theory and practice.
  4. Critical thinking skills may be enriched by utilizing digital tools. These help to ensure the engagement of students.
  5. Peer learning and discussion methods proved to be the most effective methods for developing critical thinking skills. Therefore, it is recommended to adopt these methods.

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