

Critical Thinking: Components, Skills, and Strategies

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ABSTRACT

The research paper aimed at uncovering the components of critical thinking and identifying critical thinking skills and strategies by analyzing the relevant sources and inferring the components, skills and strategies for critical thinking. It came up with a number of components of critical thinking as well as certain skills. It is noticed that most critical thinking skills revolve around skills of the Watson-Glaser model. The study also found the most important strategies for teaching critical thinking. The study indicated the importance of designing training programs for teachers in employing critical thinking skills in the educational process.

Keywords: critical thinking - critical thinking skills - components of critical thinking - critical thinking strategies.

Introduction and study problem

There is no doubt about the importance of the school's role in education and its orientation towards educating learners to think and move away from the method of indoctrination. The learner now is not as in past ages: his/her education depends on what he receives from the teacher and reads it in the textbook. Rather, information and data have become at the learner to obtain it through multiple media. This confirms the interest in teaching thinking to learners. Thinking in general helps students to gain a deeper understanding of the cognitive content they learn because learning is fundamentally a thinking process, just as employing thinking in education transforms the process of acquiring knowledge from a passive process into a mental activity. This leads to mastery of the content and linking its elements to each other. It also enables students to face the requirements of the future. It requires the acquisition of logical and mental methods in deducing and interpreting ideas (Abd Al-Atty, 2008). Critical thinking is one of the most important types of thinking that requires attention and development for learners (AL MANSOORI, ALSAUD, & YAS, 2021). For this reason, the Second Conference of Arab Ministers of Education (2000) recognized that giving an individual thinking styles, especially critical thinking is one of the goals of the school of the future (The Arab Organization for Education, Culture and Science, 2000).

Mohamed (2001) and Abdo (2003) classify the trends in defining critical thinking as follows:

The first trend: critical thinking as a process of evaluation or judgment.

The second trend: critical thinking and logical thinking are two aspects that go hand in hand.

The third trend: critical thinking as a problem-solving skill.

The fourth trend: critical thinking is a mental dispositional process.

It can be summarized in three trends:

First: Processes where the focus is on mental processes.

Second: Skills where the focus is on critical thinking skills.

Third: Results, where the focus is on the outcome of critical thinking, whether it is for evaluation and issuance of judgments or other goals and objectives of the critical thinking process, such as solving problems and the like.

Critical thinking can be presented to learners through special educational programs. It can also be presented through a single course or through its combination with academic courses. Bonnette (1997) has indicated the effectiveness of direct and indirect strategies for teaching activities and games on the development of critical thinking. Klimoviene et al. (2006) aimed to identify the effect of the use of cooperative education and its activities in developing critical thinking among students of the Faculty of Economics and Administration (Khudhair, Jusoh, Mardani, Nor, & Streimikiene, 2019). The study sample reached (90) students in the English language subject and the study tool was an observation checklist. The study showed the effect of cooperative education in developing critical thinking among students, the study sample.

That is why the current research paper came to

reveal the components, skills and strategies of critical thinking by answering the following questions:

- What are the critical thinking components?
- What are the critical thinking skills?
- What are critical thinking strategies?

Research objectives:

- Identifying critical thinking components.
- Identifying critical thinking skills.
- Identifying critical thinking strategies.

Research significance

- Providing educational officials with critical thinking: components, skills, and strategies.
- Helping researchers in the field of thinking about some elements of critical thinking.

Methodology

Content analysis: by reading the relevant references and sources, and concluding what is related to the components, skills and strategies of critical thinking.

Educational importance of critical thinking

The development of critical thinking is one of the most important demands for growth among learners (Zahran, 2001), especially with the flow of knowledge and openness in the media. Critical thinking helps to improve thinking, benefit from knowledge and the ability to judge it. The importance of critical thinking can be highlighted in the following points:

- Critical thinking is one of the most important types of thinking that helps the individual to access the correct information and critique it, resulting from the explosion of knowledge and the tremendous research progress. Shiveley and Van Fossen (1999) and Abd al-Aty, (2008) recommended the necessity of training students in critical thinking skills necessary to help them browse the Internet to search for truthful, useful, and valuable information sites.
- The development of critical thinking is an educational necessity to prepare individuals who have the ability to criticize ideas, propose solutions to problems and carefully analyze issues to reach a correct conclusion.
- It leads to a deeper understanding of the cognitive content and leads the learner to independence in his/her thinking and free him from dependency.
- It encourages a spirit of inquiry, research and non-acceptance of facts without sufficient investigation.

- The learner becomes more positive, interactive and participates in the education process.
- The learner develops communication skills and research education.
- Providing the learner with the thinking tools he/she needs in order to deal with the challenges of the information age.
- It helps the learner to use sound rules in issuing judgments, and not to rush to judgment except after verification (Asfour, 1999 and Nassar, 2008)

Research results

The result of the first question: What are the components of critical thinking?

To answer this question, some sources and references were consulted in critical thinking, and the researcher reached the following components:

Components of the critical thinking process:

Critical thinking is an interconnected process that includes five interrelated components, as indicated by (Al-Sayed, 1995), namely:

1. The knowledge base: It is what the individual knows and believes in. It is necessary for the feeling of contradiction to occur.
2. External events: These are the stimuli that evoke a sense of contradiction.
3. Personal theory: it is the personal character that the individual has derived from the cognitive base so that it is a characteristic of him/her.
4. Feeling of contradiction or divergence: Feeling represents a motivating factor that entails the rest of the critical thinking steps.
5. Resolving the contradiction: It is a stage that includes all the constituent aspects of critical thinking, as the individual seeks to solve the contradiction, including multiple steps.

The purpose of the critical thinking process can only be achieved through mental skills that are used during critical thinking. Suadah (2011, p. 105) pointed out a number of components of critical thinking, including:

1. Focusing on problems and questions.
2. Identifying various problems.
3. Focusing on related topics.
4. The ability to use important statistics and data.
5. The ability to check the strength of the proof by using re-application
6. Avoiding thinking based on self, hopes and desires.
7. Identifying multiple assumptions.
8. Dealing with unreliable or unclear information with suspicion.
9. Understanding both induction deduction skills.

10. Avoiding logical fallacies.

These components or elements of critical thinking, as called by Saadeh (2011), when contemplating it, it becomes clear that they are the closest to introductions or directives for carrying out the process of critical thinking,

In view of the components of critical thinking that have been reviewed, the components of the critical thinking process can be presented as follows:

1. The knowledge base and what the individual possesses of previous knowledge that serve as his/her assumptions.
2. The tendency to critical thinking as a result of an exciting stimulus through which an individual feels to stimulate critical thinking.
3. Using critical thinking skills.
4. Conclusion, so that the outcome of the critical thinking process is reached through the issuance of judgments, decisions, and the like.

The result of the second question: What are the critical thinking skills?

After referring to some sources, a set of classifications can be presented for skills of critical thinking as follows:

Bayer (1988) identified critical thinking skills as follows:

1. Distinguish between verifiable facts, claims and values.
2. Distinguish between information, allegations, and causes related and unrelated to the topic.
3. Determining the level of accuracy of the narrative or statement.
4. Determining the reliability of the source of the information.
5. Knowing the allegations and arguments.
6. Identifying unauthorized assumptions.
7. Detecting prejudice.
8. Identifying logical fallacies.
9. Identifying inconsistencies in the course of reasoning or conclusion.
10. Determining the strength of the proof or claim.
11. Deciding on the issue and building a sound ground for practical action.
12. Predicting the consequences of the decision or solution.

Eniss (1985) summarizes them in three main groups:

- 1- Defining and clarifying the problem.
- 2- Inference of information.
- 3- Solving the problem and drawing reasonable conclusions (Al-Shorbagy, 2008).

In this reference to the trend that focuses on problem-solving style in critical thinking, Afaneh,

(1998, 46) defined critical thinking skills in five skills, namely:

- 1- The skill of predicting assumptions.
- 2- The skill of interpretation.
- 3- The skill of evaluating discussions
- 4- The skill of deduction
- 5- The skill of induction.

These are the same skills as the Watson & Glaser model, as they are presented in the model as follows:

- 1- Identifying the assumptions
- 2- The interpretation
- 3- Inference
- 4- Conclusion
- 5- Evaluating the arguments.

As for Facione's classification, it is as follows:

- 1- Interpretation
- 2- Analysis
- 3- Evaluation
- 4- Inference
- 5- Explanation
- 6- Self-organization.

It is clear that the classifications in critical thinking skills are multiple. They are listed in terms of summary and detail, with focus on the evaluation skill, as evaluation is one of the most important goals of the critical thinking process. It is also clear that critical thinking is not just theoretical stages and methods, but a process based on mental skills that need education, training and practice.

Some education experts have sought to develop lists of critical thinking skills, concluding that the basic skills that revolve around higher mental processes include: 1- The ability to distinguish 2- Comparison 3- Conclusion 4- Prediction 5- Evaluation (Al-Sulaiti, 2006).

The researcher notes that most critical thinking skills are related to the skills of the Watson and Glaser model.

The result of the third question: What are critical thinking strategies?

Strategies for Teaching Critical Thinking:

Teaching critical thinking has many strategies that help in teaching developing critical thinking for students. Hassan (2008), Al-Harbi, (2008), and Al-Jarjara, (2008) pointed out the most important of which are the following:

- 1- Correlated Word Strategy (Mary McFarland):

It includes two sub-strategies:

- Correlated word strategy: It aims to provide examples that help teach the skill of distinguishing between the relevant and irrelevant material, as a critical thinking skill, and it is done according to the following steps:

1- Presenting a variety of words, so that each group consists of seven words that revolve around a specific topic that students know through their experiences, so that in the group there are six words related to the topic and one word that has no connection to it.

2- Discussing with students in order to identify relevant words.

3- Asking students to combine the previous words in a sentence that show the way they relate to the topic.

4- Encouraging students to think in logical and correct ways.

Point-of-view strategy: it aims to provide education and training to develop relevant arguments in order to support the points of view. This is done after collecting sufficient information on the subject of study around which a number of points of view are discussed. This strategy can be applied in education through the following steps:

1- Working on proposing a number of views on the subject.

2- Choosing a single point of view and building related supportive worships that take place through group work.

3- Evaluating each reason while choosing words that best reflect the point of view.

4- Working on arranging supportive expressions to reach convincing views.

5- Choosing a new point of view, with each student developing arguments and evidence to support his/her opinion.

6- Assuming a point of view and discussing it with another person who takes a different view.

2- Smith's strategy, assessing the validity of information sources:

This skill is based on processing information and emphasizing the importance of understanding and analysis that leads to knowing the facts and verifying their validity. This contributes to reducing memorization and preservation of information among the learners through which the evaluation process take place (Al-Harbi, 2008).

The teaching process when using this strategy goes as follows:

1- The introduction stage for the lesson through the following:

- Designing a specific incident and presenting it to students.

- Asking questions about the incident so that students are familiar with how to obtain the evidence.

2- The lesson presentation stage through the following:

- Presenting a social problem in the form of an

issue.

- Helping students to reach some criteria for judging the source.

3- The training stage on the skill of evaluating information sources through the following:

- Making a copy of the criteria for judging the sources of information and distributing them to students.

- Training students to apply these standards.

4- The conclusion stage of the lesson through the following:

- Emphasizing the importance of information in making decisions.

- Evaluating the extent of learning the skill and encouraging its application.

Smit (cited in Saadeh, 2011, p. 109) clarified the existence of necessary criteria to evaluate the validity of information by means of which sources are trusted if they match.

3- Orielly's Strategy: Identifying and Evaluating Evidence:

This strategy is based on the premise that the first step that makes an individual a critical thinker is to make the individual skeptical about what he reads and hears, but that requires teaching students the steps of critical thinking skills and training them in them until mastery.

The steps for teaching this skill are as follows:

1- The teacher begins teaching and demonstrating the skill of identifying and evaluating evidence by designing an incident that students represent.

2- The teacher's dialogue with the students about that incident by asking some questions that can be identified.

3- Students' practice of the skill through questions such as:

- Are there witnesses to the accident?

- Is there a written document supporting the incident?

- Is there concrete evidence of the accident?

4- Evaluating the evidence after the stage of determining it. Students should ask themselves some questions about the evidence, such as:

- Is the available evidence primary or secondary?

- Is there a reason that pushes the author of the evidence towards distortion or forgery?

- Is there any other evidence to support this directory?

- Is it general or specific?

5- In order for students to learn the process of evaluating the evidence better, the teacher should ask some questions such as:

- When did he say (.....) that he did not do such-and-such?

- Does he/she have any reasons for not accepting

the truth?

- Are there at least three eyewitnesses who stated that (.....) did so

And so on.

4- Bayer's strategy

This strategy is based on direct teaching of the skill and its components in detail and then providing examples of the content that is taught, together with the steps for their application as follows:

- 1- Presenting the skill, naming it, and writing it in front of the students, along with providing examples.
- 2- Clarify the procedures and rules for using the skill.
- 3- Demonstrating the method in which the skill is used and then demonstrating it by the students themselves as well.
- 4- Applying the skill.
- 5- Reflecting on what goes on in the minds of students during the implementation of the skill (Al-Harbi, 2008).

Recommendations

- Designing training programs for teachers in employing critical thinking skills in the educational process.
- Designing training programs in teaching critical thinking strategies.

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