



The Notion of Critical Thinking and Problem-Solving Tasks

1. **Turdubekova Iroda Oybek qizi**

2. **Pazilova Nasibaxon
Muhammadqosimovna**

Abstract: The article studies the notions of critical thinking and problem solving tasks. It informs the importance of improving critical thinking skills in teaching English.

Keywords: critical thinking, problem solving, inference, metacognition, autonomous learning.

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¹ Andijan state university, second-year student

² Andijan state university, docent

"Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action".

"Most formal definitions characterize critical thinking as the intentional application of rational, higher order thinking skills, such as analysis, synthesis, problem recognition and problem solving, inference, and evaluation".

Wade identifies eight characteristics of critical thinking. Critical thinking involves asking questions, defining a problem, examining evidence, analyzing assumptions and biases, avoiding emotional reasoning, avoiding oversimplification, considering other interpretations, and tolerating ambiguity. Dealing with ambiguity is also seen by Strohm & Baukus as an essential part of critical thinking, "Ambiguity and doubt serve a critical-thinking function and are a necessary and even a productive part of the process" .yt

Another characteristic of critical thinking identified by many sources is metacognition. Metacognition is thinking about one's own thinking. More specifically, "metacognition is being aware of one's thinking as one performs specific tasks and then using this awareness to control what one is doing".

In the book, Critical Thinking, Beyer elaborately explains what he sees as essential aspects of critical thinking. These are:

Dispositions: Critical thinkers are skeptical, open-minded, value fair-mindedness, respect evidence and reasoning, respect clarity and precision, look at different points of view, and will change positions when reason leads them to do so.

Criteria: To think critically, must apply criteria. Need to have conditions that must be met for something to be judged as believable. Although the argument can be made that each subject area has different criteria, some standards apply to all subjects. "... an assertion must... be based on relevant,

accurate facts; based on credible sources; precise; unbiased; free from logical fallacies; logically consistent; and strongly reasoned".

Argument: Is a statement or proposition with supporting evidence. Critical thinking involves identifying, evaluating, and constructing arguments.

Reasoning: The ability to infer a conclusion from one or multiple premises. To do so requires examining logical relationships among statements or data.

Point of View: The way one views the world, which shapes one's construction of meaning. In a search for understanding, critical thinkers view phenomena from many different points of view.

Procedures for Applying Criteria: Other types of thinking use a general procedure. Critical thinking makes use of many procedures. These procedures include asking questions, making judgments, and identifying assumptions.

Oliver & Utermohlen see students as too often being passive receptors of information. Through technology, the amount of information available today is massive. This information explosion is likely to continue in the future. Students need a guide to weed through the information and not just passively accept it. Students need to "develop and effectively apply critical thinking skills to their academic studies, to the complex problems that they will face, and to the critical choices they will be forced to make as a result of the information explosion and other rapid technological changes".

As mentioned in the section, Characteristics of Critical Thinking, critical thinking involves questioning. It is important to teach students how to ask good questions, to think critically, in order to continue the advancement of the very fields we are teaching. "Every field stays alive only to the extent that fresh questions are generated and taken seriously".

Beyer sees the teaching of critical thinking as important to the very state of our nation. He argues that to live successfully in a democracy, people must be able to think critically in order to make sound decisions about personal and civic affairs. If students learn to think critically, then they can use good thinking as the guide by which they live their lives.

There are various factors that affect student's ability to communicate in EFL/ESL classes. Here, we can mention motivation, classroom environment, and other factors such as teaching and learning contexts. Good teachers know how to challenge students. A good language teacher adopts methods and methodology according to a student's learning styles. Through this way, students are motivated to learn more and to involve themselves frequently in group or team-work. One of the factors that affect learner's communication is the learner's ability to think and act critically.

Through critical thinking, learners develop the ability to communicate in English very well. Therefore, fostering critical thinking stimulates autonomous learning. Language learning is not an easy process. Exploiting means and possibilities of practicing language in the classroom is one of the teacher's and learner's concerns too.

There are different definitions of critical thinking skills, but the essence of the meaning is the same: the ability to think logically in an inquiry way. Critical thinking refers to the ability of individuals to take charge of their own thinking and develop appropriate criteria and standards for analyzing their own thinking. Tasks and assignments used in class affect student's perception of the language. The role of the teacher in a language class is very important.

It is the teachers' role to teach learners not just language skills, but also critical thinking skills. Through reading a passage, the learners use their critical skills to analyze and understand a passage. Sometimes they use these skills unconsciously. In the course of writing an assignment, these skills are utmost helpful for learners. Recently, the fostering learners' critical thinking is considered to be one of the teacher's tasks. Critical thinking skills make students reflect and to become creative. Through

critical thinking, students become autonomous and self-confident. Critical thinking skills can be taught at all levels of studies from secondary and high -school students to university students as well.

Today, thinking skills are focused on in education. Many educational institutions have started including the set of thinking skills into curriculums, educational goals and classrooms.

Teachers of any subjects are asked to teach thinking skills as well as their subject matters, yet, only few teachers are able to define the thinking skills. Some scholars and institutions have defined their own definition of thinking skills. Fleetham defines thinking skills as mental processes which are used when solving problems, making decisions, asking questions, planning, evaluating, and creating. According to Polette, thinking skills are essential to deal with the multitude of information.

Furthermore, thinking skills are recognized as parts of 21st century skills, that are crucial skills in the new global economy and world. Lawrence identifies job skills for the 21st century, which are known as foundation skills divided into four groups; basic skills, thinking skills, people skills and personal qualities. According to Lawrence, the set of thinking skills in the job skills for 21st century is as follows;

- Creative thinking: use imagination freely, combining ideas or information in new ways; make connections between ideas that seems unrelated.
- Problem-solving skills: recognize problem; identify why it is a problem; create and implement a solution; watch to see how well solution works; revise as needed.
- Decision-making skills: identify goal desired in making the decision; generate alternatives and gather information about them; weigh pros and cons; choose best alternative; plan how to carry out choice.
- Visualization: see a building or object by looking at a blueprint, or sketch; imagine how a system works by looking at a schematic drawing.

Top 10 Skills

1. Complex problem-solving
2. Critical Thinking
3. Creativity
4. People Management
5. Coordinating with others
6. Emotional Intelligence
7. Judgement and decision making
8. Service Orientation
9. Negotiation
10. Cognitive Flexibility

As the ranking shows, four thinking skills will be needed in the new global economy, which are complex problem-solving, critical thinking, creativity, judgment and decision making.

Needless to say, other skills indeed require the thinking skills or are based on thinking skills. As Lawrence and Trilling point out that 21st century skills such as critical thinking, creative thinking, collaborative and communicative skills are required in the new global workplace, since knowledge societies where human services are more needed replaced industrial societies. The research also shows that cognitive skills such as critical thinking or problem solving skills influence individual earnings. In other words, the more people have and utilize cognitive skills, the more they tend to earn.

In conclusion, this research found that problem-solving tasks could promote thinking skills to young learners with scaffolding and questioning strategies. Problem-solving requires many kinds of steps and thinking skills. People need to identify a problem, reflect all possible aspects and causes, evaluate them and decide how to solve. This such complicated process is still difficult for young learners due

to their cognitive development, therefore, well-designed lessons with questioning strategies and scaffolding strategies are crucial to assist pupils succeed to achieve tasks. Asking questions gets pupils think more critically and activate cognitive skills.

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