

RESEARCH ARTICLE

Technology for Developing Critical Thinking Skills in Future Teachers

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Abstract

This article analyzes educational technologies that serve to develop critical thinking skills in future teachers. Critical thinking is considered one of the most important competencies in the modern education system and plays an important role in forming skills of independent thinking, problem analysis, and effective decision-making in the pedagogical process.

KEY WORDS

Critical thinking, teacher, technology, methodology, competence, interactive methods, insert, cluster.

INTRODUCTION

It is known that if a person does not have a critical attitude toward the information they know and master, it is impossible to form independence of thinking in their cognitive process. Critical thinking is not only the ability to receive information, but also the ability to analyze it deeply, compare different points of view, draw logical conclusions, and make independent decisions in the face of incorrect or alien influences. Educating a young generation capable of independent, free, and critical thinking for the development of Uzbekistan is one of the most important and urgent tasks facing our society. Therefore, in organizing the educational process in schools, academic lyceums, vocational colleges, technical schools, and higher education institutions, special attention should be paid to activating students' cognitive activity and developing their skills of independent thinking and critical views.

Critical thinking is not a skill that forms naturally and by itself. In order for it to form, students need to gain

repeated practice and experience in working with useful information, accepting different opinions, comparing and evaluating them. At the same time, the systematic acquisition of abilities and skills in the process of mastering knowledge is considered a key factor in developing independent and critical thinking. Educational institutions must organize the educational process in such a way that each student learns not only to memorize information, but also to analyze it, discuss it, check it logically, and form their own opinion. This, in turn, serves not only to increase the level of knowledge, but also to help young people grow into responsible and critically thinking individuals who can meet the requirements of modern life.

Critical thinking is not only reading or a particular subject, but the result of the educational process. It is a person's ability to approach various ideas and information critically and analytically, to consider them from the point of view of plurality of opinions,

and to compare them with other ideas [1]. It is precisely through this ability that people are able to identify disinformation widely spread in the modern information space and effectively combat it. Disinformation is incorrect, manipulative, or false information, and if it is accepted only superficially, a person's opinion may be misled and incorrect decisions may be made. Therefore, critical thinking is an important tool not only in receiving information, but also in analyzing it comprehensively, assessing the reliability of sources, and protecting oneself from any manipulation.

The first stage, the invocation stage, is an important tool for involving pupils and students in active participation in the educational process. At this stage, interactive methods, in particular the "Brainstorming" method, are used [2]. Students make a list of what they previously knew or thought they knew. This process is carried out individually or in pairs, and later in groups. Any opinion, whether correct or incorrect, is openly considered in the group and written on the board. After that, the teacher encourages students to think with questions related to the topic but not yet discussed. At this stage, the main task of the teacher is to speak less and create more freedom of speech for students. Leading students carefully listen to the opinions of weaker students in the class or group whose thinking skills are insufficient and provide guidance. The invocation stage serves to activate the student's previous knowledge on the topic. This process prepares the student to study the new topic more deeply, because if the information being studied is not connected with previous knowledge, it may be quickly forgotten [3]. Therefore, the acquisition of new knowledge in education must be carried out in close connection with existing knowledge. In the context of disinformation, the invocation stage teaches students to analyze previous information and reconsider it from a critical point of view. This is especially important in identifying incorrect or manipulative information, because with the help of critical thinking, students form a solid foundation for combating disinformation.

The second stage, the comprehension stage, gives pupils and students the opportunity to actively engage with new information and ideas. At this stage, the student receives new information through various methods such as reading a text, watching a film, listening to a speech, or conducting experiments. This process is the stage in which the teacher's influence on students is minimal and, at the same time, must be carried out independently by students. During the comprehension stage, it is important for the pupil or student to actively monitor and reassess their level of knowledge and understanding. For example, the INSERT method developed by Vagan and Estes in 1986, an interactive marking system for effective reading and the development of critical thinking, allows students to consistently control their comprehension processes. This method helps to continuously monitor and improve students' level of comprehension during reading. The comprehension stage is of great importance in the educational process, especially for students with low thinking ability. If students do not actively participate at this stage or if their level of understanding is low, the effectiveness of teaching decreases and opportunities for acquiring knowledge are lost. From the point of view of combating disinformation, the comprehension stage is an important stage in forming students' skills of identifying and critically analyzing incorrect or manipulated information. When students receive new information, they actively analyze it and increase their ability to distinguish true information from false information.

The third stage, the thinking stage, gives students the opportunity to strengthen new knowledge more deeply, add new ideas and concepts to their previous knowledge, and enrich them further. At this stage, the thinking process of students is actively formed and developed. It is precisely at this stage that several important goals are planned to be achieved. First, pupils and students try to express newly acquired ideas and information in their own words. This process is considered very important for clearly understanding new ideas and strengthening them. Forming one's

own opinion and expressing it through words is one of the main elements of critical thinking. The thinking stage is especially important in combating disinformation. This is because at this stage, students develop the skills of identifying incorrect or manipulated information, justifying their opinions, and conducting logical discussion with others. By receiving new information, analyzing it, and evaluating it, students form strong immunity against fake or incorrect messages in the information space. The thinking stage occupies a central place in forming students' independent, reasoned, and critical thinking abilities and increases the effectiveness of the educational process. The importance of the invocation stage of critical thinking lies in the fact that at this stage, pupils and students learn to effectively apply new knowledge for independently chosen goals. The invocation stage is the foundation for forming expressive and independent thinking in students and opens the way to deep comprehension by connecting newly acquired information with what they already know [4]. Also, at this stage, students' cognitive activity is activated, and their understanding and acceptance of the newly studied material become easier.

The process of forming and developing critical thinking is a complex task that is not easy. In order for this process to be successful, the following environment and conditions must be created:

1. Giving students freedom and opportunity to think independently and teaching them to listen carefully to others' opinions.
2. Openly accepting various ideas and opinions, selecting them, and developing skills of critical and creative evaluation.
3. Increasing students' activity in the educational process and encouraging them to participate actively.
4. Supporting students when they express critical opinions and ensuring that they are not ridiculed, thereby creating a safe environment for exchanging ideas.

5. Being confident that each pupil and student is capable of critical thinking and convincing them that they have this ability.

6. Instilling the importance of the process of critical thinking in students and teaching them to value it.

These conditions help to develop independent and critical thinking in the educational process; as a result, students not only acquire their knowledge more deeply, but also improve their abilities to analyze and evaluate information. This plays an important role, especially in today's information age, in combating disinformation. In exchanging opinions, students are required to listen carefully, not to impose their views on others, and to refrain from correcting other speakers. Such an approach allows students to fully listen to the opinions of others and enrich their own point of view by using their general ideas. As a result of broad discussions, pupils and students improve their abilities to analyze, clarify, and deepen the ideas relevant to them.

The "Cluster" method is considered an effective tool in developing critical thinking. A cluster, meaning "a bunch of buds" in Latin, is a pedagogical strategy that encourages students to think freely and comfortably on a topic [5]. The cluster method supports the thinking process by identifying connections between ideas. This method is not only a simple form of thinking, but also helps to activate brain activity, through which students master the topic more effectively and more deeply.

The rule for creating clusters is carried out in the following ways:

1. Write down all the thoughts that come to your mind. At this stage, it is not necessary to analyze or evaluate any thought. The important aspect is that the student freely expresses all the ideas in their mind. This method stimulates creative thinking and allows ideas to expand.

2. Do not pay attention to spelling and writing mistakes. At the initial stage, the main goal is to express thoughts freely, so no time is allocated to

correcting technical errors. This frees students from the fear that prevents them from thinking freely and expressing themselves [6].

3. Continue writing until the given time is over. If thoughts stop in your mind, you can create drawings or images on paper until new ideas appear. This process stimulates the brain, restores the flow of thoughts, and revives creative thinking.

4. Group and systematize ideas that may be connected. Divide all the obtained thoughts into separate clusters, that is, groups of ideas. By identifying the connections between these clusters, the student gains the opportunity to structure their thoughts better and view the topic more broadly. At the same time, this process helps students divide a complex topic into segments and understand each part more deeply.

The method of creating clusters arouses students' interest in a topic or phenomenon and encourages them to ask questions independently. By expressing these questions in the form of assumptions, that is, hypotheses, and testing them, students develop independent and critical thinking skills. This method also makes a great contribution to students' independence in the thinking process, creativity, and deeper understanding of the topic. Such an approach is very important in modern education for increasing students' activity, enabling them to express their thoughts freely, and forming the skills of listening to and using other opinions.

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