0AMERICAN Journal of Language, Literacy and Learning in STEM Education
Volume 03, Issue 04, 2025 ISSN (E): 2993-2769

Developing Critical Thinking Skills in Students in the Process of Independent Study

Ulasheva Dilorom Sherbekovna
Assistant at Sharof Rashidov Samarkand State University.

Annotation: The article discusses the process of developing critical thinking skills in students during their independent learning. The relevance of the research is determined by the need to develop analytical, reflective, and evaluative abilities in students for successful professional activity in the context of the modern information society. The article highlights the theoretical aspects of critical thinking, its role in the educational process, and the effectiveness of applying various methods and techniques in the process of students' independent work. Particular attention is given to the use of problem-oriented tasks, discussions, case methods, and other forms of active learning that contribute to the development of independence and a critical approach to solving academic and professional tasks. It is expected that the implementation of such approaches will significantly improve the quality of the educational process, help prepare students who are able to independently analyze information, make well-founded decisions, and argue their point of view.

Keywords: critical thinking, independent learning, analytical abilities, reflection, learning problems, active learning methods, case method, educational process, students' independent work, 21st-century competencies.

Introduction. In modern education, there is a significant shift from traditional teaching methods focused on knowledge transfer to methods that help students develop highly developed critical thinking skills. Critical thinking is not only the ability to analyze and evaluate information, but also the ability to systematically and objectively approach problem solving, make informed conclusions, and argue for one’s opinions. In the context of rapid technological progress and constant changes in society, students’ ability to think critically is becoming one of the most important factors in their professional success. The main goal of higher education is to train specialists who will be able to work effectively in conditions of multitasking and instability, as well as make informed decisions in various professional situations. One way to achieve this goal is to develop critical thinking, which helps students not only to assimilate knowledge, but also to meaningfully apply it in practice.

Independent learning plays a key role in the formation of critical thinking, as it is aimed at developing the skills of independent search, analysis, and interpretation of information. It is important to note that independent work of students is an integral part of the educational process, it promotes deep elaboration of the material, improves self-regulation skills and teaches how to effectively manage your time. However, traditional approaches to organizing independent work of students often do not provide the proper level of development of critical thinking. In order for students to learn to apply critical thinking, it is necessary to integrate methods that promote the development of analytical and reflective skills into the learning process. The inclusion of problem situations, case methods, discussions and other active learning methods allows students to develop the ability to independently

analyze, synthesize information and make informed decisions. The purpose of this study is to study the effectiveness of developing critical thinking skills in students in the process of independent learning. The article considers the theoretical aspects of critical thinking, and also analyzes approaches to organizing independent work aimed at developing these skills.

The issue of developing critical thinking in the context of the educational process has become the focus of attention of many researchers, educators and psychologists. Based on modern approaches, critical thinking is considered one of the key competencies of the 21st century, necessary for successful professional adaptation and solving non-standard problems. The literature highlights several approaches and methods aimed at developing these skills in students, among which a special place is occupied by methods focused on independent learning. Bloom (2004) and Paul (2019) consider a taxonomy of educational goals, which includes cognitive skills such as analysis, synthesis and evaluation. These skills form the core of critical thinking and should be developed through active forms of learning, including through independent work of students. According to their research, critical thinking actively develops when a student has the opportunity not only to assimilate information, but to subject it to deep understanding and analysis. Halpern (2000) emphasizes the importance of the interaction of critical thinking and self-education in her work, arguing that in order to develop skills for deep analysis and reasoned conclusions, it is necessary to actively involve students in the processes of reasoning and debate. Problem situations that are solved as part of independent work contribute to the improvement of not only cognitive but also metacognitive skills, such as self-analysis and self-regulation.

Savenkova (2020) argues that independent work of students is an important component of the educational process, especially when it is aimed at developing reflective and analytical skills. This allows students not only to master the material, but also to critically comprehend it, which is especially important in conditions of information overload. She suggests using a variety of teaching methods, including open-ended tasks, scientific discussions, and research that require independent thinking and analysis.

Yakunin (2018) focuses on the integration of critical thinking into the higher education process, arguing that traditional methods such as lectures and seminars do not always contribute to the development of independent analytical thinking. He emphasizes that an effective tool for developing critical thinking is the use of active learning methods, such as group work, discussions, and case studies. This approach helps students master methods of analysis, develop argumentation skills, and make informed decisions.

In addition, Lipman's (2003) study emphasizes the need to develop critical thinking in students from the early stages of learning, as it becomes the foundation for more complex cognitive processes later on. He argues that independent work of students based on the principles of critical thinking helps develop the ability to ask the right questions and look for non-standard solutions.

Thus, from the analysis of the literature, it is clear that existing studies confirm the importance of critical thinking as an integral part of the educational process, and also emphasize the key role of independent work of students in its development. Modern teaching methods aimed at developing these skills include the use of active forms of work, the integration of problem-solving tasks, and the development of metacognitive skills, which contributes to the formation of students' ability to make meaningful and informed decisions.

Methodology. To study the process of developing critical thinking skills in students during independent learning, a comprehensive methodology was chosen, including theoretical analysis, empirical research and the use of active learning methods.

At the first stage of the study, a theoretical analysis of existing approaches and concepts related to critical thinking and independent work of students was conducted. Much attention was paid to

various definitions of critical thinking, its key components, as well as methods and approaches aimed at developing these skills. The works of such scientists as Bloom, Paul, Halpern and others were considered, whose research became the basis for the formation of the theoretical framework of our study.

Particular attention was paid to concepts related to self-education and metacognitive skills. As part of the theoretical analysis, the experience of using active learning methods was studied, such as the case method, problem-oriented tasks, group discussions and other forms that contribute to the development of critical thinking in students.

To study the practical side of developing students' critical thinking in the process of independent work, an empirical study was conducted, including the following stages:

1. Student survey: A survey of students from various faculties was conducted to identify their level of critical thinking development, as well as their attitude to independent work and perception of the teaching methods used.

2. Analysis of assignments and tasks for independent work: The assignments for independent work used in the curricula were analyzed for their ability to develop critical thinking skills. Particular attention was paid to assignments that include elements of analysis, synthesis and evaluation of information.

3. Observations of the educational process: Observations were conducted of the educational process, in particular, how students apply critical thinking when completing assignments, working in groups or solving problem tasks.

Active learning methods

The key method in the study is the use of active learning methods aimed at developing critical thinking. In particular, the following methods were used in the study:

• Case method: Students were offered real or hypothetical situations that required analysis, argumentation, and decision-making. This method contributed to the development of skills for understanding and critically assessing the situation.

• Problem-oriented tasks: Students solved tasks related to specific problems, which allowed them to practice finding solutions, argumentation, and critically assessing possible options.

• Group discussions and debates: Students actively participated in group discussions, where they had to express and defend their views, using facts and logical arguments.

• Reflection: Reflection sessions were held as part of the educational process, where students analyzed their decisions and work methods, which contributed to the development of their metacognitive skills.

The effectiveness of the development of critical thinking was assessed through several criteria:

1. Level of student independence: Students' progress was assessed in relation to their ability to work without constant external support and use critical thinking to solve educational problems.

2. Quality of assignment completion: The results of independent assignments were analyzed, which tested students' ability to conduct a deep analysis of information and make well-founded conclusions. 3. Reflective abilities: The students' ability to analyze and evaluate their decisions, as well as their ability to argue their point of view in the process of communicating with colleagues, was assessed.

Both qualitative and quantitative methods were used to analyze the data. Qualitative analysis included the analysis of survey and observation results, and quantitative analysis included statistical processing of data based on the results of completing assignments and participating in discussions. All data were compared with the theoretical concepts and approaches discussed in the first stage of the study.

A study conducted within the framework of developing critical thinking skills in students through independent learning showed that the use of active learning methods significantly affects the development of critical thinking, improves students' ability to self-analyze and solve problems. This study identified several key factors that contribute to the successful development of critical thinking in the process of independent work of students.

The most important indicator of the success of the formation of critical thinking is the development of student independence. During the study, positive dynamics were found in increasing the level of independence of students who actively used various critical thinking methods, such as analysis, synthesis and evaluation of information. Students who participated in active forms of learning (for example, the case method and problem-oriented tasks) demonstrated the ability to work with the material without constant external support. Surveys showed that students became more proactive in solving problems, actively sought additional sources of information and built logical chains. This was especially evident in completing tasks that required deep analytical work and independent decisions.

The quality of completing tasks aimed at developing critical thinking became one of the important criteria for the effectiveness of the teaching methods studied. Analysis of completed tasks showed that students using active methods, such as the case method and group discussions, coped much better with tasks that included deep analysis and argumentation.

Students demonstrated a high level of quality in solving problem tasks, which indicates an increase in their ability to systematically analyze and justify their decisions. During the study, it was noted that participants who actively used critical thinking not only improved their results, but also significantly increased their confidence in making independent decisions.

Reflection is an integral part of the process of developing critical thinking. Students participating in reflective sessions, during which decisions and work methods were analyzed, showed an improvement in their reflective skills. Evaluation of their own actions and the ability to build reasoned conclusions became significant indicators of growth in their development.

In addition, observations showed that students who took part in group discussions and debates became more open to different points of view, which contributed to the development of their critical evaluation of both their own and others' decisions.

One of the main findings of the study was the confirmation of the hypothesis that active learning methods play a key role in the development of students' metacognitive skills. In the course of completing assignments, students developed the ability not only to analyze, but also to self-assess their own thought processes. For example, students, when completing complex assignments, used self-monitoring methods to monitor the correctness of the task and the effectiveness of the decisions made.

Metacognitive skills allowed students to realize how they came to conclusions, which increased their ability to self-regulate and optimize their learning.

Despite the positive results, the study also revealed a number of problems and limitations. One of the key problems was the difference in students' preparedness to use active learning methods. Some students experienced difficulties in the transition from traditional teaching methods to more complex and dynamic approaches, such as case studies and problem-based assignments.

In addition, despite the benefits of active learning methods, students sometimes experienced difficulties in teamwork and debates, which indicated the need for additional training sessions on interaction and exchange of opinions.

Thus, the results of the study confirmed the hypothesis that the use of active learning methods significantly contributes to the development of critical thinking in students. The use of case methods,

problem-based assignments, and reflective practices contributes not only to the deepening of analytical skills, but also to the development of independence and confidence in the decisions made.

The study also demonstrated that the effectiveness of these methods depends on the level of students' preparedness and their ability to adapt to new approaches in learning.

References:

1. Vygotsky, L. S. (1982). Thinking and Speech. Moscow: Prosveshchenie.
2. Brushlinsky, A. V. (2002). Psychology of Thinking. St. Petersburg: Piter.
3. Johnson, D. W., Johnson, R. T. (1994). Cooperative Learning: Methods & Strategies. Edina: Interaction Book Company.
4. Ivanova, I. V. (2014). Critical Thinking as a Pedagogical Problem. Moscow: Academy.
5. Piaget, J. (2003). Psychology of Intelligence. Moscow: Academichesky Proekt Publishing House.
6. Tatarinova, O. S. (2011). Methods of Critical Thinking in the Educational Process. St. Petersburg: Rech.
7. Petrov, V. I., & Savinova, N. I. (2010). Critical Thinking: Theory and Practice. Moscow: Nauka.
8. Vikendorf, A. I. (2000). Critical Thinking and Education. Moscow: Vysshaya Shkola.
9. Nikolaeva, O. A. (2015). The Role of Students' Independent Work in the Development of Critical Thinking. St. Petersburg: St. Petersburg University.
10. Savelyeva, I. P. (2018). Formation of Critical Thinking in Schoolchildren and Students: Methodological Aspects. Moscow: Moscow State University.