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## SYNERGY OF REFLECTION AND CRITICAL THINKING: A CATALYST FOR STUDENTS' INTELLECTUAL GROWTH

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**Abstract.** The article is dedicated to exploring the interaction between reflection and critical thinking in the context of developing students' intellectual abilities. Special attention is given to studying the impact of reflective practices on stimulating critical thinking in younger students and their ability to analyze and perceive information critically and objectively.

The article analyzes the fundamental aspects of reflective activities, including its role in developing students' consciousness, self-awareness, and internal processing of acquired information. The authors investigate various methods and techniques of reflection that educators can use to activate students' critical thinking. Specifically, the article offers practical case studies of implementing reflective approaches in the educational process.

The primary aim of the article is to raise educators' awareness of the significance of the interaction between reflection and critical thinking as key elements in students' intellectual development. The information presented in the article will contribute to the expansion of methodological foundations for promoting reflective processes in teaching and supporting the development of critical thinking among younger students. The research findings can be practically applied in educational institutions and contribute to improving the quality of education.

**Keywords:** reflection, reflective activity, critical thinking, primary school students, development, strategy.

### 1. INTRODUCTION

In the modern world, education is undergoing transformations that change approaches to teaching and students' development. Increasingly, attention is focused on fostering cross-cutting skills that become key competencies of the younger generation. Development of critical thinking plays an important role in shaping active, creative, and independent individuals capable of analyzing information, evaluating situations, and making logical decisions.

Among the pedagogical practices that promote the development of critical thinking, reflection occupies a special place. Reflective activity allows students to actively engage in the process of self-awareness, conscious assimilation of acquired information, and understanding of their own beliefs and actions. Combining reflective approaches with strategies for developing critical thinking contributes to the formation of profound knowledge, which becomes the foundation for successful intellectual growth of students. It is worth noting the connection between reflection and formative assessment, which are important in the New Ukrainian School (NUS) for achieving key educational goals, including the development of critical thinking and student independence (Parfilova & Kerezora, 2021, pp. 189-201).

In the context of the New Ukrainian School (NUS), reflection serves to support learning based on understanding and self-regulation of students. It allows students to become aware of their successes, progress, and shortcomings, contributing to error correction and enriching their learning experience.

Reflection also promotes the development of metacognitive skills, enabling students to control their own learning activities more effectively. Formative assessment is one of the key tools in NUS that fosters the development of reflective abilities in students. Instead of traditional judgments of success or failure, formative assessment is focused on understanding and supporting learning.

Reflection and formative assessment in NUS are interconnected as both processes emphasize active student engagement in their own learning and development. They help support students in understanding their needs, achievements, and opportunities, fostering self-esteem, responsibility, and a values-oriented approach to learning. This approach creates a conducive environment for the development of critical thinking and the formation of competent, self-sufficient, and reflective students (Fidkevich & Bohdanets-Biloskalenko, 2020, pp. 20-21).

This article is dedicated to synthesizing scientific approaches and practical research on the interaction of reflection and critical thinking in primary school students. By combining theoretical analysis and practical examples, we aim to demonstrate how reflective practice can contribute to the development of critical thinking and become a true catalyst for the intellectual growth of young students. The conclusions drawn from this research will be valuable for educators who seek to enhance the effectiveness of teaching and foster the intellectual advancement of their students.

## 2. LITERATURE REVIEW, GENERALIZATION OF MAIN STATEMENTS

Many foreign scholars such as D. Dewey, D. Klooster, A. Crawford, M. Lipman, K. Meredith, R. Paul, J. Stile, Ch. Temple, D. Halpern, and others, as well as Ukrainian researchers like O. Pometun, I. Sushchenko, S. Terno, O. Tiaglo, O. Fidkevych, N. Bohdanets-Biloskalenko, and others have dedicated their research to studying various aspects of critical thinking and reflective practices.

Matthew Lipman, an American philosopher and educator, is the founder of the Institute for Critical Thinking. He became a pioneer in researching critical thinking within the context of education and developed a methodology for fostering critical thinking in students through philosophical dialogue (Lipman, 1998, pp. 38-43). Lipman defined critical thinking as "skilled, responsible thinking that facilitates good judgment because it relies on criteria, is self-correcting, and is directed at context" (Tiaglo, 2006, pp. 26-27).

It is worth noting that Lipman (2003, pp. 205-243), based on his own research, identified six key elements of critical thinking:

1. Thinking skills, which involve mastering certain techniques that develop the apparatus of thinking operations.
2. Formulating independent judgments, which entails the ability to make productive comparisons between different judgments and identify alternatives.
3. Responsibility, which involves the ability to support one's opinions with persuasive arguments that will be subject to further consideration by others.
4. Self-correction, which involves using critical thinking as a method directed at one's own judgments to rectify or improve them.
5. Criteria selection, which a critical thinker takes into account for their detailed analysis or criticism.
6. Attention and sensitivity to context, which involves understanding general criteria in connection with their context of use and developing alternative criteria that correspond to a specific situation.

John Dewey was an American philosopher, psychologist, and educator who made a significant contribution to the development of the theory of reflection and critical thinking. It was Dewey who developed the concept of reflective thinking as the basis for the ideas of critical thinking (Terno, 2014, pp. 21-30).

David Kolb is an American psychologist who worked in the field of learning and educational experiences, particularly in the study of reflection in learning processes. Kolb's developed cyclical four-stage empirical model of the learning process and human assimilation of new information is quite

intriguing from a scientific perspective and can be fully applied to critical thinking development lessons (Saul McLeod, 2023).

Let us note that the researcher closely linked the learning process with thinking, particularly critical thinking. Experiential learning is the foundation of the cycle, where learning starts with gaining specific experience (Stage 1), which transforms observation and integration of this experience into a knowledge system through reflection (Stage 2). This, in turn, facilitates the formation of abstract concepts (analysis) and conclusions (Stage 3), which are then tested through active experimentation in various situations - imaginary, real, or simulated (Stage 4). This learning process is quite flexible and can start from any stage. It proceeds cyclically until the necessary skill is formed. Once the knowledge is acquired, the brain is ready to perceive new information. An essential element of Kolb's theory is the learner's internal cognitive processes and reflective activity. According to Kolb's theory, the impulse for progressive steps in learning activity is provided by new meaningful experiences.

American researchers Colley et al., 2012 argue that lifelong learning is achieved through reflection, which is a key component of critical thinking. According to their studies, the learning process begins with metacognition, based on knowledge of one's own thoughts and contemplations, helping individuals identify the factors influencing their own thinking (pp. 1-2).

As for Ukrainian researchers, Olena Pometun focuses on studying pedagogical reflection, the development of students' critical thinking, and the use of innovative teaching methods (Pometun, 2020). The researcher emphasized the complexity, multidimensionality, and multilevel nature of critical thinking, highlighting that it combines several processes such as analysis, synthesis, and well-grounded evaluation of information credibility. This skill enables individuals to identify problems, understand their causes, predict consequences, and formulate alternative hypotheses for their resolution. Additionally, a critical thinker can generate or modify their position based on objective facts and arguments, which helps them make well-informed decisions. Thus, critical thinking involves cognitive strategies and operations that allow individuals to efficiently utilize mental resources for formulating well-reasoned conclusions, assessments, and decision-making.

Pometun (2017) emphasizes that such thinking can be continuously improved, and the school provides an ideal environment for its formation and development in students, where they learn to utilize intellectual tools to organize their mental activities in real-life situations. The process of developing critical thinking, according to the researcher, means acquiring the skill of being aware of various influences and overcoming or considering limitations, which increases awareness and expands thinking, making individuals deeper and more independent (pp. 8-9).

The studies of Fidkevych and Bohdanets-Biloskalenko (2020) are worth mentioning, which explore the role of reflection in the pedagogical process, the development of critical thinking in students through reflective activities (pp. 20-21).

It is also important to consider models of critical thinking development lessons, particularly the model that includes a reflection stage. This lesson strategy, proposed by researchers A. Crawford, V. Saul, S. Mathews, and J. Macinster, consists of three phases: Anticipation, Building Knowledge, and Consolidation/Reflection. Each of these phases has its own implementation methodology and can incorporate various methods to stimulate and enhance students' critical thinking skills (Crawford et al., 2005).

**Phase of Anticipation:** In this phase, the teacher activates students' prior knowledge on the topic of the lesson, creates intrigue and interest in the learning material. Questions, stimulating tasks, and discussion prompts can be used to engage students in active participation and analysis of the topic.

**Phase of Building Knowledge:** At this stage, the teacher introduces new material, and students actively engage in the process of learning it. They analyze information, ask questions, form hypotheses, and explore various aspects of the topic. Different methods can be used in this phase, such as group work, debates, project-based activities, interactive tasks, and more.

**Phase of Consolidation:** In this stage, students reflect, systematize, and generalize their knowledge.

They express their thoughts, provide arguments, analyze the gathered information, and draw conclusions. Discussion methods, written exercises, project activities, role-playing games, and others can be employed in this phase.

Implementation of this basic lesson model helps enhance students' critical thinking skills and develops their abilities in analysis, evaluation, argumentation, and problem-solving. The reflection phase, which is included in the consolidation, allows students to critically assess their own learning and development process, leading to better understanding and improved learning outcomes.

Reflexive activity goes beyond mere self-analysis and self-awareness. It also involves processes such as understanding and evaluating others. Through reflexive activity, one achieves a correlation between their self-awareness, values, and opinions with the values and opinions of other individuals, groups, society, and ultimately with widely-held beliefs (Maraliv, 2011, p. 172).

For a more successful implementation of reflective activities in the education of younger students, it is essential to consider the variety of forms and strategies that correspond to their age-specific characteristics. Reflection can be both verbal and written, as well as individual or group based. The teacher independently selects the appropriate form of reflection based on the topic, objectives, and tasks of the lesson.

### 3. DISCUSSION

Reflection has its place at any stage of the lesson and is not limited to its completion. It can be applied in various aspects of learning and divided into the following types:

1. Reflection on mood and emotional state: It allows students to comprehend their emotions and moods during learning, helping them understand their impact on the learning process.
2. Reflection on activities: It is aimed at analyzing different aspects of one's own actions during the lesson, enabling students to self-assess and determine the effectiveness of their actions.
3. Reflection on the content of the educational material: It assists students in evaluating, understanding, and analyzing the study material, leading to a deeper comprehension and assimilation of information.

For the effective integration of different types of reflection into the lesson and achieving desired outcomes, modern critical thinking strategies can be utilized. These strategies help students engage in self-analysis and self-determination, promoting their development and enhancing the quality of the learning process.

Below there are examples of reflective activity techniques that can be applied during critical thinking development lessons.

The "Pyramid of the Composition" strategy allows reflecting on a read piece of work. In this method, children follow an algorithm, where the entries in the pyramid itself represent the student's work (Fig. 1).

1. Hero/Heroine's Name.
2. Two words describing the hero/heroine.
3. Three words describing the setting.
4. Four words describing the story's problem.
5. Five words about an event happening to the hero/heroine.
6. Six words promoting reevaluation of the situation.
7. Seven words about an event that resolves the problem.
8. Eight words describing the problem's solution.
9. Nine words - key phrase - conclusion.

It's worth noting that the original version lacks the ninth item. However, while working with children, we noticed that the pyramid seems slightly incomplete in this version and requires a concluding phrase to summarize everything.

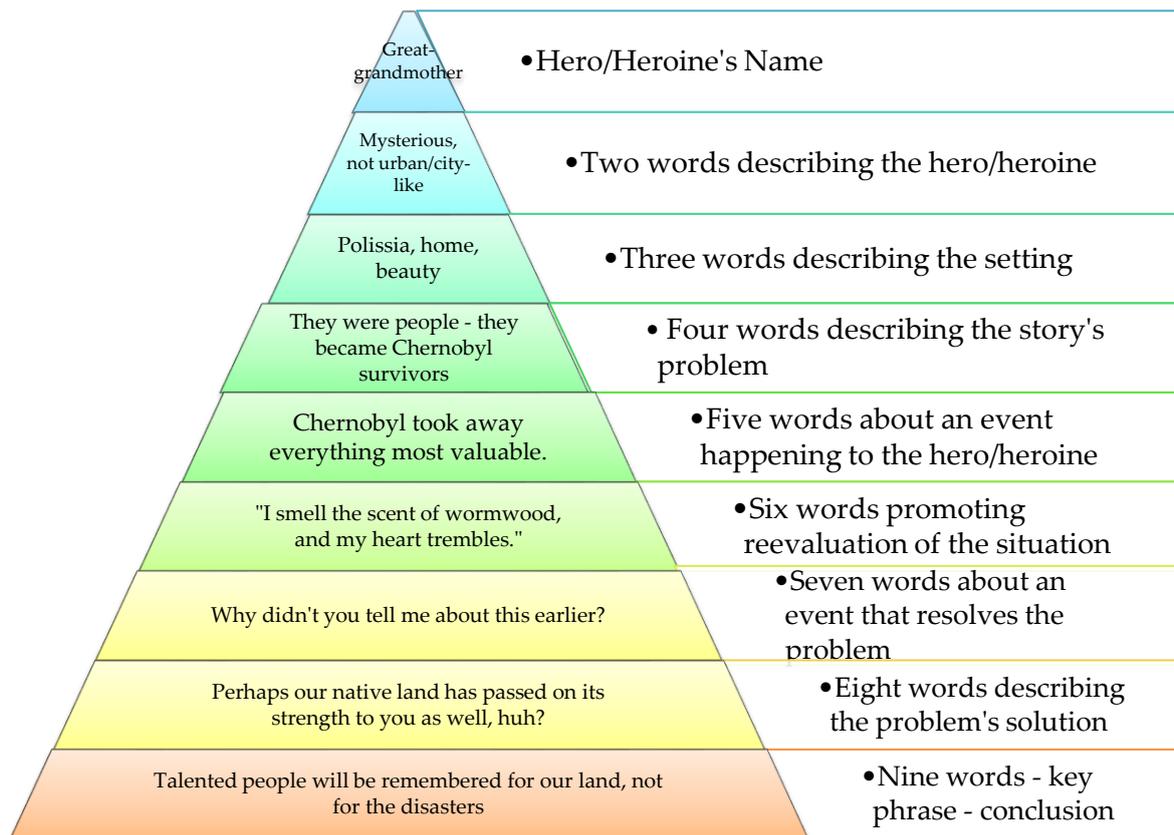


Fig. 1. The pyramid of the story "Flowers near the Fourth" by Katerina Mihalychyna

The "Senkan" method can be used when students are just learning to reflect. This technique involves creating a verse according to certain rules:

First line offers the concept dedicated to the verse, a noun. Second line is presented by two adjectives that describe and define this noun, conveying the idea about it. Third line gives three verbs that indicate action related to the concept. Fourth line shows a four-word phrase expressing the attitude towards the concept. Fifth line offers one or two words representing feelings or associations connected to the given concept.

For example:

*Great-grandmother.*

*Mysterious, not from the city.*

*Remembers, tells, captivates.*

*They were humans - turned into Chernobyl survivors.*

*Overcome.*

By offering students such reflection methods, the teacher will see what the children understood, how they perceived the work, and what needs additional work.

When planning reflective activities in the lesson, it is worth referring to the research of Liz Brown and her "Learning Dive" strategy (Brown, L., 2014, pp. 56-65).

The strategy involves deep immersion in the learning activity. The main goal is to direct younger students to the deepest levels of reasoning, gradually encouraging them to engage in profound reflections and reflective activities.

Each level of immersion corresponds to the following questions:

- Knowledge: What did I accomplish?
- Comprehension: How important is what I accomplished?
- Application: Where can I use this again?
- Analysis: Are there patterns or algorithms in what I accomplished? How is it related to my success

or outcome?

- Evaluation: How well did I accomplish the task? What can be improved?
- Synthesis: How can I use this new experience in the future? What did I discover about myself as a learner?

Another effective tool is the “Writing for Yourself” strategy. Students are given the task to jot down their thoughts, feelings, and reflections on paper or in a digital format on a given topic (usually related to the lesson).

Writing for oneself allows students to engage in deep reflection and freely express their thoughts, experiences, and impressions about a specific subject. They can talk about their successes, challenges, or simply express their emotions. During this process, students can ask themselves questions and analyze their actions. It allows them to better understand themselves, their motivations, and goals.

It is important to remember that children need to be taught to reflect and analyze their own actions. For this purpose, the teacher can provide students with ready-made questions to facilitate reflection. Here are some examples for younger students that will help them engage in reflection and develop critical thinking. They can acknowledge their strengths, contemplate their abilities, and explore ways for improvement.

After any learning session:

- What did I like the most about the lesson?
- What was new or interesting to me?
- Did I understand the new topic, or did I have any questions?
- What skills did I develop during this lesson?
- Did I encounter any difficulties, and how did I overcome them?

After performing at a school event:

- What did I like the most during the performance?
- How did I feel when I was performing in front of the audience?
- Is there anything I would like to change or improve in my performance?
- What did I gain from this experience? What skills did I enhance?

After reading a book:

- Which part of the book did I like the most?
- Did any questions arise while reading?
- Did I have any thoughts or observations about the main characters?
- What moral or life lessons did I understand from this book?
- Did I experience any emotions while reading, and why?

After working on a team project:

- Which parts of the project were the most interesting to me?
- How well did we collaborate as a team?
- What was the most challenging or difficult aspect of the project?
- What contributions did I make to the project, and how can I improve next time?
- What did I gain from this experience, and how can I apply it in the future?

These simple questions will help children focus on their thoughts, impressions, and emotions, as well as stimulate their critical thinking and reflective skills.

#### **4. CONCLUSION**

Overall, reflective practice is crucial in critical thinking development lessons, which can be built using any model or technology. Reflection can be present at various stages of such a lesson. Educators can employ different methods, strategies, and techniques for this purpose.

As we can see, the synergy of reflection and critical thinking in the context of developing students' intellectual abilities is the area of active research in pedagogy and psychology. Contemporary scholars

and researchers continue to explore the role of reflection and critical thinking in shaping students' intellectual skills and develop new methods and approaches for their effective cultivation. By integrating the results of their research, the authors aim to highlight important aspects of reflective practice that contribute to the development of critical thinking in younger students and propose diverse methods and techniques that can enhance the learning process and enrich students' intellectual abilities.

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Стаття присвячена дослідженню взаємодії між рефлексією та критичним мисленням в контексті розвитку інтелектуальних здібностей учнів. Особлива увага приділяється вивченню впливу рефлексивної практики на стимулювання критичного мислення у молодших школярів, а також їхньої здатності аналізувати і сприймати інформацію критично та об'єктивно.

У статті проаналізовано основні аспекти рефлексивної діяльності, зокрема її роль у розвитку свідомості учнів, самопізнанні та внутрішньому опрацюванні отриманої інформації. Автори досліджують різні методи та техніки рефлексії, які можуть бути використані педагогами для активізації критичного мислення учнів. Зокрема, стаття пропонує практичні кейси упровадження рефлексивних підходів в освітній процес.

Основною метою статті є підвищення усвідомленості освітян щодо важливості взаємодії рефлексії та критичного мислення як ключових елементів розвитку інтелектуальних здібностей учнів. Інформація, представлена у статті, сприятиме розширенню методологічних засад роботи зі стимулювання рефлексивних процесів у навчанні та підтримці розвитку критичного мислення серед молодших школярів. Результати дослідження можуть знайти практичне застосування в освітніх інституціях та сприяти покращенню якості освіти.

**Ключові слова:** рефлексія, рефлексивна діяльність, критичне мислення, молодші школярі, розвиток, стратегія.