THE ROLE OF METACOGNITIVE REGULATION IN DEVELOPING EFL STUDENTS' CRITICAL THINKING THROUGH PROJECT-BASED LEARNING

Berdiyorova Shakhnoza Kholmakhammatovna
Tashkent State University of Economics, English teacher
sh.berdiyorova@tsue.uz
https://orcid.org/0009-0006-6587-5862
Doi: https://doi.org/10.5281/zenodo.22908219

Abstract. This article highlights the role of metacognitive management in developing the critical thinking skills of EFL (English as a Foreign Language) students within a project-based learning environment. Metacognitive management enables students to plan their thinking processes, monitor their activities, analyze results, and revise their strategies when necessary. In project-based learning, activities such as independently exploring problem situations, searching for and evaluating information, exchanging ideas within a group, and defending final results strengthen students' analytical approaches. Throughout this process, metacognitive reflection encourages students to justify their decisions, compare diverse perspectives, and substantiate their conclusions with evidence. Consequently, alongside language proficiency, competencies in independent thinking, problem-solving, and self-assessment are cultivated.

Keywords: metacognitive management, critical thinking, project-based learning, EFL students, reflection, independent learning, problem situation, analytical thinking, English language, educational strategies.

In the modern teaching of English as a foreign language (EFL), the primary focus has shifted beyond the mere acquisition of grammatical rules and vocabulary; emphasis is now placed on fostering students' independent thinking, problem analysis, information evaluation, and the ability to articulate views based on evidence. In an EFL environment, learners often have limited opportunities to use English in real-life communicative situations. Consequently, it is crucial to employ teaching methods that facilitate natural communication, inquiry, problem-solving scenarios, and independent decision-making.

Project-Based Learning (PBL) is one such method; it positions the student not as a passive recipient of pre-existing knowledge, but as an active participant seeking answers to specific problems or questions. Throughout the project process, students gather information, compare various sources, exchange ideas, make decisions, create a final product, and present or defend their work. In this regard, PBL creates a favorable pedagogical environment for developing both language competence and higher-order thinking skills[1].

Research published in 2025 demonstrates that EFL students develop critical thinking skills through the PBL process by resolving problematic situations, conducting inquiries, and engaging in reflective assessment. Another study has identified the positive impact of online PBL on the critical thinking and reading comprehension skills of EFL students.

However, project-based learning in itself does not automatically foster critical thinking. A student might simply complete the project as a routine assignment, gather ready-made information from the internet, or defer to the opinions of other group members. In such cases, even though a project is being carried out, deep cognitive engagement may not occur to a sufficient degree. This is where metacognitive regulation becomes a crucial tool.

Metacognitive regulation refers to an individual's ability to understand, plan, monitor, control, and evaluate their own thinking processes. Simply put, the student begins to ask themselves not only "What do I know?" but also questions such as "How am I learning?", "Which method is effective for me?", "Is my conclusion based on evidence?", and "How can I correct my mistakes?"

Metacognitive regulation can be divided into three main stages: planning, monitoring, and evaluation. During the planning stage, the student defines the objective of the task, identifies necessary resources, and develops a strategy for execution. During the monitoring process, the student tracks their progress and checks whether or not they are deviating from the planned path. In the evaluation stage, they analyze the final outcome and determine what changes need to be made in the future[5].

For example, suppose students are given a project assignment in an English class on the topic: "How can we make our university more environmentally friendly?" In a standard PBL approach, students identify environmental issues at the university, gather information, and prepare a presentation in English.

However, when a metacognitive approach is applied, students answer the following questions before the project begins:

What project outcome do we aim to achieve?

What information is needed to study the problem?

Which sources are reliable?

How will we distribute tasks among group members?

How do we determine if the information is sufficient?

Throughout the project, students also ask themselves questions such as: "Does the information we selected help explain the problem?", "Is the source reliable?", "Have we considered other perspectives?", and "Is our conclusion supported by evidence?"

Thus, metacognitive management transforms PBL from a simple activity into a conscious and reflective learning process.

Critical thinking is not merely the acceptance of information, but a process of analyzing it, evaluating evidence, drawing conclusions, and re-examining one's own views. Therefore, there is a strong functional link between critical thinking and metacognitive management.

For instance, a student might encounter the idea online that "social media is harmful for students." Through critical thinking, they must analyze the basis of this claim. Metacognitive management, in turn, prompts them to ask questions such as: "Why did I believe this idea?", "Do I have sufficient evidence to support this conclusion?", and "Have I looked for opposing viewpoints?" Thus, while critical thinking involves performing cognitive operations on information, metacognitive management helps monitor how these operations are carried out[1].

In a PBL (Project-Based Learning) setting, these two processes complement each other. The student identifies the problem, gathers information, compares data, and draws conclusions, all while monitoring their own thought process. A 2023 study demonstrated a significant link between metacognition, creativity, and critical thinking within the context of PBL.

To integrate PBL with metacognitive management in EFL classes, the project process can be divided into several stages.

The first stage — problem identification.

At this stage, rather than assigning a pre-set topic, the teacher encourages students to formulate questions. For instance, if a project is organized around the topic "How does technology change the way students learn English?", students should explore not only the positive aspects of technology but also its potential negative aspects.

Metacognitive question: "Have we formulated the problem correctly?"

Students define the project's goal, tasks, deadlines, and resources. One student in the group might prepare a survey, another analyze academic sources, a third conduct interviews, and a fourth turn the results into a presentation in English[3].

During this process, each student answers the question: "What knowledge do I possess to carry out this task?"

The third stage is data collection and analysis.

This stage is one of the most crucial processes for critical thinking. Students gather information from the internet, books, articles, interviews, or surveys. However, the requirement is not simply to accept any information found, but to verify its reliability.

For instance, if the project topic is "The influence of smartphones on English learning," a student should not weigh a casual opinion from social media equally against the results of scientific research. They must analyze the source's author, place of publication, evidence, and purpose.

Metacognitive question: "Why did I choose this specific source?"

Group members compare various pieces of information. While one student might believe that technology facilitates English learning, another might argue that excessive use of technology could hinder independent thinking[2].

The reflection process conducted at the end of the project allows students to re-examine their experiences. For instance, at the start of a project, a student might hold the view that "Social media is always useful for English learning." During the course of the research, however, they identify not only the benefits of social media but also issues such as distracting content, misinformation, and excessive time consumption.

Consequently, their initial opinion may shift to: "Social media can support English learning if learners use reliable resources and manage their time effectively."

This shift is a key indicator of critical thinking. The student does not simply swap one opinion for another; rather, they re-evaluate their previous perspective based on new evidence.

Research from 2026 indicates that not all components of critical thinking in Project-Based Learning (PBL) are activated simultaneously or to the same degree. Specifically, processes such as interpretation and self-regulation tend to emerge closer to the project's conclusion, requiring time, clear assessment criteria, and feedback[6].

Therefore, teachers must allocate sufficient time for the project, establish interim checkpoints, and provide students with regular feedback. A pedagogical model for integrating PBL and metacognitive management

In EFL education, this approach can be organized according to the following sequence:

Problem → Planning → Inquiry → Analysis → Discussion → Product Creation → Presentation → Reflection → Re-planning.

In this model, each stage is inextricably linked to the next. For instance, an improperly formulated problem can distort the direction of the subsequent inquiry, while the use of unreliable sources affects the validity of the final conclusion. Therefore, metacognitive monitoring must be carried out continuously throughout the project[4].

Another key aspect of this model is that the processes of language learning and thinking are not separated. Students use English to search for information, engage in discussions, ask questions, construct arguments, write, and deliver presentations. In this way, language serves as a tool, while thinking ensures the meaningful use of that tool.

Consequently, the EFL lesson transforms from mere "English language practice" into an active learning environment based on the principle of "English through thinking."

Overall, the integration of PBL, metacognitive management, and critical thinking has the potential to fundamentally transform the EFL student's learning experience. The student transforms

from a subject who merely memorizes pre-existing knowledge into an active learner who identifies problems, poses questions, seeks information, evaluates sources, compares ideas, draws conclusions, and reflects on their own activities.

From this perspective, metacognitive management can be viewed as one of the internal mechanisms of PBL. It enables the student to shift from the question "What did I learn?" to higher-level inquiries such as "How did I learn? Why did I reach this conclusion? and How can I learn more effectively next time?" This very process serves as a crucial pedagogical foundation for fostering independent, evidence-based, and reflective thinkers in EFL education.

References

1. O‘rinov R.Y., Nabiyev O.O. Metakognitiv strategiyalar asosida bo‘lajak ingliz tili o‘qituvchilarining intellektual kompetentligini takomillashtirish // Yosh olimlar. – 2026. – 4-jild, 54-son. – B. 58–62.
2. Ermetova J.I., Axmedova U.K. Ta’lim jarayonida loyiha texnologiyasini ingliz tilini o‘qitish darslariga integratsiya qilish // Quality of Teacher Education Under Modern Challenges. – 2023. – B. 1–8.
3. Berdiyorova Sh.X. O‘quvchilarning tanqidiy fikrlashini rivojlantirishda “Project-Based Learning” texnologiyasining pedagogik salohiyati // Science Time. – 2026. – 4-jild, 3/2-son. – B. 362–366
4. Ubaydullayeva M. Ingliz tilini o‘qitish orqali tanqidiy fikrlash qobiliyatini rivojlantirish // Conference of Natural and Applied Sciences in Scientific Innovative Research. – 2024. – 1-jild, 9-son. – B. 79–81.
5. Kasimkhodjayeva M. Metakognitiv yondashuv asosida ingliz tilini o‘qitish // Вестник педагогов нового Узбекистана. – 2025. – 3-jild, 2-son. – B. 1–5.
6. Masharibova S.A. O‘zbekiston umumta’lim maktablarida ESL/EFL ta’limida lug‘at boyligini rivojlantirishda loyiha asosidagi yondashuvning nazariy va amaliy imkoniyatlari // Ilm-fan va innovatsiya. – 2025. – B. 104–107.
7. Nurmatova M.T., Nabiyeva A.U. O‘zbek tilida so‘zlashuvchi talabalar uchun ingliz tilini o‘rganishda kognitiv jarayonlar va strategiyalar // Tanqidiy nazar, tahliliy tafakkur va innovatsion g‘oyalar. – 2025. – B. 1–5.
8. Berdiyorova Shaxnoza Xolmaxmatovna. ,,The Terminology Representing Human Resources and Their Study’’. American Journal of Education and Learning, Volume 2, ISSN Online: 2996-5128, ResearchBib Impact Factor (IF) = 9.918, December 2024 914-921 bet
9. Berdiyorova Shaxnoza Xolmaxmatovna. „Differentiate Your Teaching Instruction in ESP Classroom’’. *Innovation Science and Technology* ilmiy-ommabop elektron jurnali, 2025-yil, 2-son, ISSN 3060-5229, 102–104-betlar; ro‘yxatga olish raqami C-5669633 (AOKA, 09.10.2024)
10. Berdiyorova Shaxnoza Xolmaxmatovna. ,,The Role of Interactive Multimedia Tools in Modern Classrooms’’. IBAST – International Bulletin of Applied Sciences and Technology, Volume 2, Issue 9, ISSN: 2750-3402, Impact Factor: 8.2, 2025, pp. 1–6; DOI: 10.5281/zenodo.15687275. 290-295 bet
11. Berdiyorova Shaxnoza Xolmaxmatovna. ,,Turli xil qobiliyatli sinfda barcha talabalarning ehtiyojlarini inobatga olgan holda inklyuziv o‘quv muhitini yaratish’’ .“PEDAGOGIK MAHORAT” ilmiy-nazariy va metodik jurnal. 2025, № 5. ISSN 2181-6833. 65-70-bet
12. Berdiyorova Shaxnoza Xolmaxmatovna. ,,Loyiha asoslangan ta’lim orqali talabalar mustaqil fikrlash va muammolarni hal qilish qobilyatini oshitish’’. “PEDAGOGIK MAHORAT” ilmiy-nazariy va metodik jurnal. 2025, № 11. ISSN 2181-6833. 161-166- bet

13. Berdiyorova Shaxnoza Xolmaxmatovna. „Zamonaviy o'quv muhitida tanqidiy fikrlashni rivojlantirish omillari va ularning ta'limga ta'sir''. "Filologiya va pedagogika" ilmiy-metodik elektron jurnali, 2025-yil, 14 (18)-son, e-ISSN 3060-4885. 113-114- bet