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EFL TALABALARDA TANQIDIY FIKRLASHNI RIVOJLANTIRISH MAQSADIDA GAMIFIKATSIYALANGAN TA'LIM MUHITLARIDA BLUM TAKSONOMIYASINI QO'LLASH

Mirbakieva Nigora Azadovna
O'zbekiston davlat jahon tillari universiteti,PhD tadqiqotchisi

Annotatsiya

Mazkur maqola talabalarning tanqidiy fikrlash ko'nikmalarini rivojlantirish maqsadida Blum taksonomiyasini gamifikatsiyalangan ta'lim muhitlariga integratsiya qilishni ko'rib chiqadi. Tadqiqotning asosiy maqsadi — eslab qolishdan yaratishgacha bo'lgan tuzilgan kognitiv darajalarni o'yin mexanikalariga qanday qilib singdirish mumkinligini hamda bu orqali chuqurroq o'rganishni rag'batlantirishni ko'rsatishdan iborat. Ishda gamifikatsiyalangan o'quv dasturida ishtirok etayotgan respondentlardan ma'lumot to'plash uchun aralash metodologik yondashuv qo'llanildi. Natijalar shuni ko'rsatadiki, yuqori darajadagi kognitiv jarayonlarga moslashtirilgan o'yin topshiriqlarini qo'llash talabalarning tahliliy va baholash ko'nikmalarini sezilarli darajada rivojlantiradi. Ushbu tadqiqot Blum taksonomiyasiga asoslangan gamifikatsiyalangan ta'lim tanqidiy fikrlashni rivojlantirishda samarali model ekanligini asoslab beradi.

Kalit so'zlar: EFL, tanqidiy fikrlash, gamifikatsiya, Blum taksonomiyasi

ПРИМЕНЕНИЕ ТАКСОНОМИИ БЛУМА В ГЕЙМИФИЦИРОВАННЫХ ОБРАЗОВАТЕЛЬНЫХ СРЕДАХ ДЛЯ РАЗВИТИЯ КРИТИЧЕСКОГО МЫШЛЕНИЯ У СТУДЕНТОВ EFL

Мирбакиева Нигора Азадовна
Узбекский государственный университет мировых языков, исследователь PhD

Аннотация

Данная статья рассматривает интеграцию таксономии Блума в геймифицированные образовательные среды с целью развития критического мышления студентов. Исследование направлено на демонстрацию того, каким образом структурированные когнитивные уровни — от запоминания до создания — могут быть встроены в игровые механики для стимулирования более глубокого обучения. В работе применяется смешанный методологический подход для сбора данных от участников, вовлечённых в геймифицированную учебную программу. Результаты показывают, что включение игровых заданий, соотнесённых с когнитивными процессами высокого порядка, значительно усиливает аналитические и оценочные способности студентов. Данное исследование вносит вклад в понимание того, что геймифицированное обучение, основанное на таксономии Блума, представляет собой эффективную модель развития критического мышления.

Ключевые слова: EFL, критическое мышление, геймификация, таксономия Блума

APPLYING BLOOM`S TAXONOMY WITHIN GAMIFIED LEARNING ENVIRONMENTS TO PROMOTE CRITICAL THINKING OF EFL STUDENTS

Mirbakieva Nigora Azadovna
Uzbekistan State World Languages University, PhD Researcher

Abstract

This article examines an integration of Bloom`s Taxonomy within gamified learning environments to enhance students` critical thinking skills. This study aims to highlight that the

systematic cognitive levels varying from remembering to creating can be integrated into game mechanics to encourage deeper learning. The study is intended to employ a mixed method approach to collect data from the participant engaged in the gamified curriculum. The results show that applying game tasks with higher order cognitive progressions considerably expands students` analytical and evaluative abilities. This article contributes to understanding that gamified instruction based on Bloom`s Taxonomy offers an efficient framework for advancing critical thinking.

Keywords: EFL, Critical thinking, gamification, Bloom`s taxonomy

Critical thinking is an essential skill that has received substantial attention in educational contexts in the 21st century, especially in English as a Foreign Language (EFL) classrooms. It is widely recognized as an important skill for language learning, academic success, and professional development. In EFL education, critical thinking functions not only as a language learning strategy but also as a tool for developing higher-order reasoning skills. It enables learners to engage more deeply with language materials, question assumptions, and explore multiple perspectives. Within the framework of EFL education, critical thinking skills play a crucial role in problem-solving and decision-making, contributing to academic achievement and preparing learners for real-world challenges. Moreover, critical thinking enhances learners' ability to manage complexity and generate innovative solutions. According to Facione, critical thinking also encourages lifelong learning by fostering habits of continuous questioning and self-evaluation (4; 32–36-p.). In the modern workplace and democratic society, critical thinking is increasingly important for adaptability, informed decision-making, and active participation. Omolegbe emphasizes that the cultivation of critical thinking promotes independence and self-reliance, which are indispensable for personal and professional growth (6; 768–791-p.). Despite its recognized importance, however, the development of critical thinking skills remains challenging, as conventional instructional methods often prioritize content delivery over cognitive engagement.

Gamification in education is regarded as a foundation for the implementation of advanced approaches and strategies that support active learning. According to Tapscott, gamification has initiated a new trend in modern English teaching across many educational settings, including EFL contexts (7; 123–127-p.). This strategy may be described as the application of game design elements and gaming principles in educational environments. Gamification is widely considered a contemporary trend in modern education because it introduces game-like experiences into non-game settings. However, the concept of gamification is not entirely new in education. According to Hamari et al., gamification can increase students' enthusiasm and motivation in their efforts to improve English language skills (5; 325–334-p.). With the rapid development of digital technologies, teachers are becoming increasingly aware of the potential of gamification to create more engaging and learner-centered foreign language teaching and learning environments. Gamification is not merely the use of game elements; rather, it is the application of game mechanics to enhance learner engagement, encourage collaborative learning environments, and promote learner autonomy. Nevertheless, Adele confirms that many gamified learning environments tend to focus on low-depth interaction, such as reward collection and task completion, rather than on deeper cognitive development (1; 245–250-p.). To address this limitation, it is essential to combine gamification with well-established cognitive frameworks that promote logical reasoning. In this regard, Bloom's Taxonomy, which identifies different levels of cognitive thinking, serves as an important framework. It ranges from lower-order thinking skills, such as remembering and understanding, to higher-order skills, such as analysis, evaluation, and creation. The integration of gamified learning activities with these cognitive levels offers a promising way to transform gamification from a mere set of tools into a framework for meaningful learning.

The present study aimed to investigate whether the implementation of Bloom's

Taxonomy within a gamified framework can enhance critical thinking skills in B2-level reading and writing classes. In addition, it sought to examine the effect of this approach on students' motivation and language performance. The study employed a quasi-experimental pre-test/post-test control group design to examine the effect of a gamified learning environment structured according to Bloom's Taxonomy on B2 learners' critical thinking, reading, and writing skills. The independent variable was the instructional method, that is, traditional instruction versus gamified Bloom's Taxonomy-based instruction. The dependent variables included reading comprehension performance, writing quality, and critical thinking ability. The study involved 80 EFL learners enrolled in a university language program at Millat Umidi University. The participants were divided into two groups:

- **Control group (n = 40):** received traditional reading and writing instruction.
- **Experimental group (n = 40):** participated in a gamified learning environment.

The participants ranged in age from 18 to 24 years and had similar educational backgrounds. The same instructor taught both groups in order to minimize variation in teaching approach. The selected materials were taken from B2-level textbooks and authentic English sources. These materials were lexically appropriate and structurally complex in accordance with B2 standards.

The experimental group participated in a gamified program structured around the cognitive levels of Bloom's Taxonomy. As Anderson noted, Benjamin Bloom was an educational psychologist who, in 1956, published a classification system that enabled educators to categorize specific critical thinking skills and thus better understand them (2; 23–27-p.). According to Wilson et al., the taxonomy guided teaching and instructional planning for nearly 50 years before it was revised in 2001 by Anderson and Krathwohl (5; 2–3-p.). According to Sowton et al., the revised Bloom's Taxonomy addressed many of Bloom's own concerns and criticisms regarding the original taxonomy (3; 9–10-p.). The six discrete skills identified in the taxonomy are generally divided into Lower Order Thinking Skills (LOTS) and Higher Order Thinking Skills (HOTS).

The first level of LOTS, remembering, includes recognizing or recalling knowledge from memory, such as definitions, facts, or previously learned information. At this stage, participants completed vocabulary recall quizzes and main idea identification tasks. They were actively engaged in this process through platforms such as Quizlet and StudyStack, which provided instant feedback and a reward-based grading system for accurate responses. The second stage of LOTS, understanding, involves meaning construction through interpreting, classifying, exemplifying, summarizing, and making inferences. At this stage, participants engaged in tasks such as comparison, discussion, restatement, and prediction through interactive simulations and scenario-based tools such as Classcraft narrative quests. The third LOTS stage, applying, required participants to produce guided responses using the target language. Collaborative platforms such as Padlet and Miro supported the transition to deeper analysis and evaluation by enabling students to organize, compare, and critique ideas collaboratively. At the first HOTS stage, analyzing, participants were involved in strategy-based challenges that required them to examine details of information through explanation, contrast, investigation, and categorization. In the following stage, evaluating, participants were asked to make judgments based on specific criteria and standards and to respond to decision-making scenarios. At this stage, platforms such as Google Classroom and Moodle facilitated the evaluation process by requiring students to assess their peers' solutions and justify their judgments according to clear criteria.

In the final stage, **creating**, which is considered the most cognitively demanding, participants engaged in project-based game design assignments. This process represents the highest level of mental functioning in the revised taxonomy. Project-based creation tools such as Scratch, Minecraft Education Edition, and Twine encouraged students to design original projects and digital stories that demonstrated knowledge synthesis and innovation. Multiple data collection instruments were used to ensure a holistic evaluation of students' critical thinking and engagement

in the gamified environment. All of these instruments were designed to align with the cognitive levels described in Bloom's Taxonomy and to capture both qualitative and quantitative aspects of learning. The combined data analysis revealed a strong alignment between quantitative improvements and qualitative learning experiences.

The overall analysis showed a strong correspondence between quantitative gains and qualitative experiences across several categories. First, the greatest quantitative improvement was observed in higher-order thinking skills, namely analysis, evaluation, and creation. This finding was corroborated by reflective journal data, which illustrated increasingly complex problem-solving strategies. Second, the survey results and interaction data provided clear evidence of motivational impact, showing that gamification promoted consistent participation and sustained effort. Finally, patterns of interpersonal collaboration reflected qualitative evidence of peer-supported reasoning and strategy exchange, both of which made a meaningful contribution to the development of critical thinking. These findings indicate that Bloom's Taxonomy-informed gamification not only improves critical thinking outcomes but also creates a structured learning experience that meaningfully promotes engagement, collaboration, and transferable skills. As noted above, the study systematically explored how the integration of Bloom's Taxonomy into gamified instruction influenced students' critical thinking. The results showed that both learner engagement and higher-order thinking skills can be methodologically improved through systematic gamification aligned with cognitive levels.

The findings further demonstrated that the experimental group showed significant progress in higher-order thinking skills, particularly analysis, evaluation, and creation, in comparison with the control group. This evidence supports the hypothesis that gamified tasks designed in accordance with Bloom's Taxonomy provide instructional scaffolding that helps students progress from lower-order to higher-order thinking. For example, the study found that recall and comprehension tasks supported by gamification strengthened the understanding of foundational concepts, which subsequently enabled students to engage in problem-solving, strategy formulation, and original creation tasks. Overall, the study demonstrates that gamified learning environments designed in accordance with Bloom's Taxonomy can effectively promote critical thinking, improve student engagement, and encourage collaborative, reflective, and creative behaviors. These findings highlight the importance of intentional instructional design in gamification, emphasizing that structured cognitive alignment, rather than merely playful interaction, is the key to achieving meaningful educational outcomes.

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