

THE INTEGRATIVE MODEL OF DIAGNOSING AND CORRECTING STUDENTS' THINKING PROCESSES IN THE MODERN EDUCATION SYSTEM

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DOI: <https://doi.org/10.5281/zenodo.21822460>

Abstract. This article examines the integrative model for diagnosing and correcting students' thinking processes in the modern education system. It explores a holistic educational approach that integrates cognitive, metacognitive, and socio-emotional dimensions to improve learning outcomes. The study analyzes the effectiveness of diagnostic methods, including formative assessment, think-aloud protocols, concept mapping, and Cognitive Structure Analysis (CSA), in identifying students' cognitive patterns and learning difficulties. Furthermore, it highlights the role of Problem-Based Learning (PBL), metacognitive strategies, and adaptive instructional practices in fostering critical thinking, problem-solving abilities, and cognitive competence. The findings indicate that an integrative diagnostic and corrective framework significantly enhances students' intellectual development, promotes meaningful learning, and improves the overall quality of education in contemporary educational settings.

Keywords: integrative model, thinking processes, diagnosis, correction, cognitive skills, critical thinking, metacognitive strategies, Cognitive Structure Analysis, Problem-Based Learning, modern education.

Аннотация. В статье рассматривается интегративная модель диагностики и коррекции мыслительных процессов студентов в современной системе образования. Особое внимание уделяется комплексному подходу, объединяющему когнитивные, метакогнитивные и социально-эмоциональные компоненты обучения. Анализируются возможности использования формирующего оценивания, протоколов «think-aloud», концептуального картирования и метода Cognitive Structure Analysis (CSA) для выявления особенностей мышления студентов и определения направлений педагогической коррекции. Обоснована эффективность проблемно-ориентированного обучения (Problem-Based Learning – PBL), метакогнитивных стратегий и адаптивных методов преподавания в развитии критического мышления, навыков решения проблем и когнитивных компетенций обучающихся. Сделан вывод, что интегративная модель диагностики и коррекции способствует повышению качества образования и интеллектуального развития студентов.

Ключевые слова: интегративная модель, мыслительные процессы, диагностика, коррекция, когнитивные навыки, критическое мышление, метакогнитивные стратегии, Cognitive Structure Analysis, Problem-Based Learning, современное образование.

Annotatsiya. Mazkur maqolada zamonaviy ta’lim tizimida talabalarning tafakkur jarayonlarini diagnostika qilish va korreksiya qilishning integrativ modeli nazariy hamda amaliy jihatdan tahlil qilinadi. Tadqiqotda kognitiv, metakognitiv va ijtimoiy-emotsional omillarni birlashtiruvchi integrativ yondashuvning ta’lim samaradorligini oshirishdagi o’rni yoritilgan. Talabalarning fikrlash jarayonlarini aniqlashda formatif baholash, "think-aloud" protokollari,



konseptual xaritalash va Kognitiv Tuzilma Tahlili (Cognitive Structure Analysis – CSA) kabi diagnostik metodlarning imkoniyatlari ko‘rib chiqilgan. Shuningdek, muammoga asoslangan ta’lim (Problem-Based Learning – PBL), metakognitiv strategiyalar va moslashuvchan pedagogik yondashuvlarning tanqidiy fikrlash, muammolarni hal qilish hamda kognitiv kompetensiyalarni rivojlantirishdagi samaradorligi asoslab berilgan. Natijalar zamonaviy ta’limda diagnostika va korrektsiyaga asoslangan integrativ model talabalarning intellektual rivojlanishi hamda ta’lim sifatini oshirishning muhim omili ekanligini ko‘rsatadi.

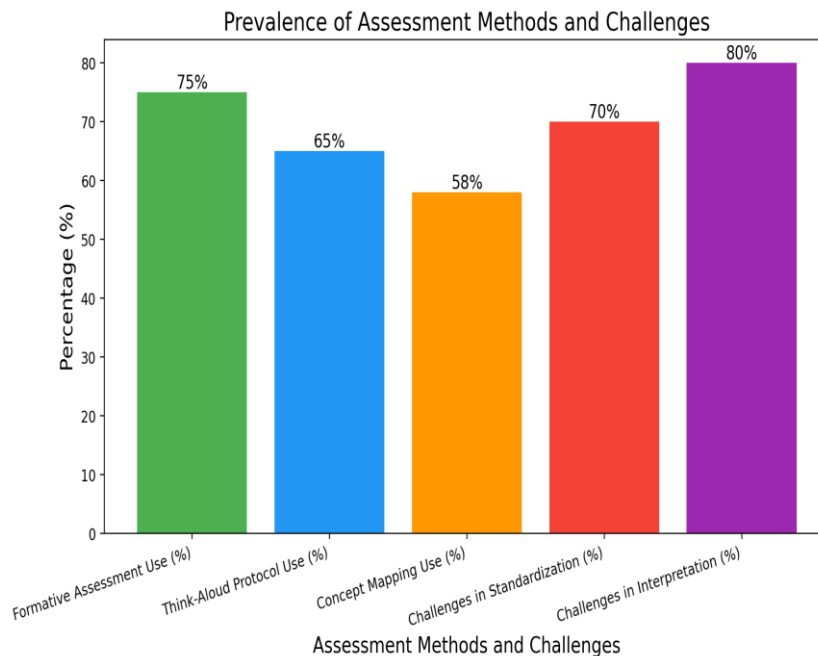
Kalit so‘zlar: integrativ model, tafakkur jarayonlari, diagnostika, korrektsiya, kognitiv ko‘nikmalar, tanqidiy fikrlash, metakognitiv strategiyalar, Cognitive Structure Analysis, Problem-Based Learning, zamonaviy ta’lim.

Understanding the integrative model in contemporary educational settings

In the rapidly evolving landscape of contemporary education, understanding the Integrative Model becomes paramount for effectively diagnosing and correcting students' thinking processes. This model transcends traditional pedagogical approaches by emphasizing a holistic view of learning that incorporates cognitive, emotional, and social dimensions. By fostering critical thinking and problem-solving skills, educators can better engage students in meaningful learning experiences. Furthermore, the nuanced perceptions of faculty and students regarding critical thinking integration in curricula underscore the importance of adapting teaching methods to foster a more engaging educational environment (Syahrin S et al., 2024) . To visualize these foundational components, the theoretical framework presented in illustrates how different learning theories can be integrated, providing insight into interactive and reflective educational practices. Overall, the Integrative Model represents a transformative approach, calling for educational stakeholders to rethink and refine their methodologies to optimize student learning outcomes.

Diagnosing students' thinking processes: methods and challenges

In the exploration of diagnosing students' thinking processes, a multifaceted approach proves essential in addressing the individual learning needs that characterize diverse classrooms. Employing various assessment methods, such as formative assessments, think-aloud protocols, and concept mapping, facilitates a deeper understanding of students' cognitive processes and their approaches to problem-solving. These methods not only illuminate students' thought patterns but also identify gaps in their understanding, which is paramount for developing targeted interventions. However, challenges arise in the practical application of these techniques; educators often face difficulties in standardizing assessments and interpreting the results effectively. Furthermore, there is an ongoing debate about the balance between assessing thinking processes and the constraints of curriculum demands. Despite these challenges, the integration of such diagnostic methods is critical for nurturing essential skills. As emphasized in recent studies, the incorporation of thinking-based learning fosters enhanced critical thinking and problem-solving skills, significantly preparing students for future challenges and (Rusmin L et al., 2024) . The successful diagnosis of thinking processes ultimately positions educators to rectify misunderstandings and adapt teaching strategies, fulfilling their role in the integrative model of education that supports holistic student development in the modern educational landscape.



This chart illustrates the prevalence of various assessment methods and the challenges educators face in standardizing and interpreting these assessments.

Strategies for correcting and enhancing cognitive skills in students

Conclusion

In conclusion, the integration of diagnostic and corrective strategies within the educational framework is essential for enhancing students' thinking processes in contemporary learning environments. The emphasis on Problem-Based Learning (PBL) as illustrated in (Ing. Garz FDón Ponce. Msc et al., 2025) highlights not only its effectiveness in fostering critical thinking skills but also the necessity for ongoing teacher training and curricular adaptations. Where thinking-based learning is positioned as a superior alternative to traditional methodologies, significantly improving students' cognitive and professional competencies. Such insights reveal that educational success is intrinsically linked to how well these strategies are implemented across various educational contexts and levels. To support this conclusion visually, the diagram in, outlining key learning theories, reinforces the theoretical underpinnings of these educational strategies, thereby demonstrating how diverse approaches can be cohesively integrated to benefit student learning outcomes. Ultimately, the findings advocate for a paradigm shift toward holistic educational practices that prioritize the development of critical thinking and problem-solving abilities, which are indispensable in preparing students for the complexities of modern society.

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“Pedagogik ta’lim va tarbiya transformatsiyasida fundamental, amaliy va innovatsion tadqiqotlarning konseptual asoslari” mavzusidagi Xalqaro ilmiy-amaliy anjuman materilalari to‘plami



23.06.2026

Proceedings of the International Scientific and Practical Conference on “Conceptual Foundations of Fundamental, Applied, and Innovative Research in the Transformation of Pedagogical Education and Upbringing”

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