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**THE IMPORTANCE OF TEACHING BASED ON INTERDISCIPLINARY  
INTEGRATION OF MEDICAL AND BIOLOGICAL SCIENCES**

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**Abstract**

This article highlights the essence, significance, and advantages of teaching subjects in an integrated manner within the educational process. It substantiates that integrated education is an important factor in developing students' systematic thinking, linking knowledge with real life, and fostering a creative approach.

**Keywords**

integration, integrated education, interdisciplinary connection, modern education, teaching methods.

**ВАЖНОСТЬ ПРЕПОДАВАНИЯ, ОСНОВАННОГО НА МЕЖДИСЦИПЛИНАРНОЙ  
ИНТЕГРАЦИИ МЕДИЦИНСКИХ И БИОЛОГИЧЕСКИХ НАУК**

**Аннотация**

В данной статье освещаются сущность, значение и преимущества преподавания предметов интегрированным образом в рамках образовательного процесса. Обосновывается, что интегрированное образование является важным фактором в развитии системного мышления учащихся, установлении связи между знаниями и реальной жизнью, а также в формировании творческого подхода.

**Ключевые слова**

интеграция, интегрированное образование, междисциплинарная связь, современное образование, методы обучения

**Introduction**

In the modern education system, providing students with knowledge only within the framework of separate subjects is no longer sufficient. The development of society, as well as the rapid progress of science and technology, requires new approaches to education. One such approach is integrated teaching, which activates students' cognitive activity by ensuring interdisciplinary connections.

The idea of teaching based on interdisciplinary integration has been scientifically grounded in pedagogy and psychology, and it implies mastering knowledge not in isolation but in an interconnected manner. This approach has been studied by many pedagogical scholars since the twentieth century.



**Psychological Foundations.** According to psychological foundations, the psychologist L. S. Vygotsky emphasized that presenting knowledge in an interconnected way during the learning process contributes to the development of students' thinking. According to his theory of the "zone of proximal development," interdisciplinary connections expand students' cognitive capabilities and help them acquire knowledge more deeply [1,2,3,4].

**Pedagogical Foundations.** In pedagogy, interdisciplinary integration is considered an important factor that increases the effectiveness of education. According to the scholar V. V. Davydov, ensuring connections between subjects in the teaching process makes it possible to link theoretical knowledge with practice [5,6]. Integrated teaching: forms knowledge as a holistic system; develops students' independent and critical thinking; ensures the connection of educational content with real life. **Didactic Significance** From a didactic point of view, interdisciplinary integration: reduces repetition of learning material; enriches lesson content; enables efficient use of time [7,8]. Pedagogical scholar Yu. K. Babansky scientifically substantiated that interdisciplinary connections play an important role in optimizing the educational process. **Essence and Advantages of Integrated Education.** Integrated education is the organization of the teaching process by ensuring interconnections between different subjects. In this process, students understand a topic from the perspectives of various disciplines and acquire knowledge in a holistic way.

The advantages of integrated education include: the formation of systematic and logical thinking skills in students; holistic rather than fragmented acquisition of knowledge; increased interest in subjects and enriched lesson content; learning to apply knowledge in real-life situations; development of creative and critical thinking; effective use of instructional time.

**Practical Significance of Integrated Education.** Integrated lessons are especially effective in teaching subjects such as language and literature, history, geography, and biology. For example, using historical texts in language classes or studying nature-related topics in connection with literature expands students' knowledge horizons.

Interdisciplinary integration is considered one of the most important methodological foundations of the modern educational process. It represents a complex teaching system (interrelation, unification, integration) based on the idea of combining educational material within a specific semantic space.

The integrative approach serves as the methodological basis of interdisciplinary integration. The first aspect is the development of students' competence. The second aspect is the personal need for development aimed at applying competencies in practice within a certain field of activity.

Lectures, seminars, practical classes, and distance learning are the most common forms of interdisciplinary integration. In these forms, dynamic elements of integration are applied, which make it possible to achieve high-quality pedagogical outcomes when appropriate methods and technologies are used. **Problems of Interdisciplinary Integration in Modern Education.** Modern education faces two main problems in interdisciplinary integration: Compatibility in terms of time and space when teaching individual subjects; reliance on the knowledge base of previously studied subjects when teaching subsequent ones; continuity and consistency of development; the need for unity in interpreting general scientific concepts across different disciplines; a unified approach to organizing the educational process; integration of all components of the educational module based on subject content.

**Requirements for Interdisciplinary Integrated Modules.** The purpose of creating integrated modular courses is to form the content of studying a holistic complex of disciplines through integrated tools.



Interdisciplinary integration enables the formation of basic complexes of knowledge, skills, and competencies that include epistemological, axiological, cognitive, communicative, managerial, and activity-based aspects of the teaching process.

Vertical and horizontal integration are applied in education. Vertical integration involves teaching subjects at different stages or academic years, while horizontal integration involves combining similar learning material across different subjects.

Example of Interdisciplinary Integration in Practice. At the Department of Physiology and Pathology of Tashkent State Dental Institute, education is carried out based on an integrated modular system. Interdisciplinary integration is based on eight modules: excitable tissues, blood, respiration, cardiovascular system, digestion, nervous system, endocrine system, and urogenital system. For each module, educational and methodological complexes have been developed, and electronic training programs have been prepared. Integrated lectures are structured according to syndromes, such as bronchial obstruction and lung tissue consolidation syndromes, respiratory failure syndrome, acute coronary insufficiency syndrome, and others. In the normal physiology module, problem-based learning, group work methods, and discussions of integrated clinical situations are used. Case analyses related to specific topics are conducted across all eight modules. Integrated clinical situations are applied in modules on respiration, digestion, circulation, and excretion systems. This approach increases students' interest in the subject and allows the material to be presented in an accessible and comprehensible manner.

## Conclusion

In conclusion, integrated teaching is an effective pedagogical approach that contributes to improving the quality of education. It develops students' independent thinking, deep knowledge acquisition, and practical application skills. Therefore, the widespread implementation of integrated education in the modern education system is of great importance.

Analysis of scientific sources shows that interdisciplinary integration-based teaching: meets modern educational requirements; activates students' cognitive activity; ensures deep, conscious, and stable acquisition of knowledge.

Thus, interdisciplinary integration is one of the most important scientific and pedagogical directions in improving the education system today.

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