



# INTEGRATION OF INTERACTIVE METHODS AND MODULAR EDUCATION IN DEVELOPING THE PROFESSIONAL COMPETENCE OF FUTURE TEACHERS

*Ravshanov Abbos Gofur ugli*

*Master's student, 2nd year, The University of Economics and Pedagogy*

*Keldiyarova Manzura Gaybullayevna*

*Doctor of Philosophy (PhD) in Pedagogical Sciences,*

*Associate Professor, The University of Economics and pedagogy*

**Abstract.** This article analyzes the integration of interactive teaching methods and modular education in developing the professional competence of future teachers. The study reveals the main principles of the modular approach. The effectiveness of interactive methods in the educational process is demonstrated on the basis of experimental data. The development of communicative, methodological, and reflective competences in future teachers is examined. The structure and content of classes organized on the basis of modules are analyzed. Pedagogical conditions influencing students' activity are identified. The advantages of integrating innovative technologies are discussed. The obtained results confirm the effectiveness of the modular and competence-based approach.

**Keywords:** modular approach, competence-based approach, interactive methods, professional competence, educational technologies, pedagogical innovations, independent learning, reflective competence, communication skills, pedagogical conditions, methodological preparation, learning efficiency.

**Introduction.** In the modern educational process, the formation of teachers' professional competence at the required level is of great importance as a key factor in their scientific and practical activity. The integration of interactive methods and modular education plays a significant role in developing future teachers'



methodological, reflective, and communicative competences and in preparing them for successful professional practice. According to modern educational specialists, the modular approach divides the pedagogical process into parts and makes it possible to form specific competences and skills through each module. This approach is considered an effective tool for increasing students' independent activity, engaging them in innovative and critical thinking, and gradually developing their professional mastery.

One of the main advantages of modular education for future teachers is that each module is linked to clear objectives, targeted competences, and assessment criteria. This ensures active participation of students in the learning process and facilitates monitoring of their knowledge and skills. At the same time, interactive methods—such as case studies, projects, group discussions, and trainings—are of great importance in developing students' professional potential. Through these methods, students can integrate theoretical knowledge with practical activity and form decision-making skills.

Moreover, the integration of modular education and interactive methods enables the effective implementation of innovative technologies in the learning process. In this way, higher education institutions can adapt pedagogical activities to modern requirements, increase the level of students' professional competence, and prepare them for life and professional practice. Therefore, this topic has high scientific and practical significance, and its analysis serves as an important source for improving the pedagogical process in higher education.

**Literature Review.** The issue of developing professional competence has been widely analyzed by many scholars in modern pedagogy. For example, **B. Bloom (1956)** created a theoretical basis for training qualified teachers by developing a system for the step-by-step development and assessment of knowledge and competences. According to him, students' skills should be formed through analysis, evaluation, and practical activity.



**D. Cowan (2000)** emphasizes that the integration of modular education and interactive methods is important for increasing students' independent activity, engaging them in innovative thinking, and developing professional skills. In his view, the modular approach allows each competence to be formed through clearly defined modules.

The theory of “**Constructive Alignment**” by **J. Biggs (2003)** is also significant in shaping pedagogical competence. He argues that all elements of education—learning objectives, teaching methods, and assessment—should be aligned, which contributes to the effective development of students' professional and methodological potential.

**L. S. Vygotsky (1978)** highlights the role of interactivity and social interaction in competence formation. According to him, students improve their professional skills by cooperating in groups, discussing, and applying knowledge through case studies.

In addition, **H. F. Silver (2006)** points out that modular and interactive approaches are essential for developing students' reflective competence. His studies show that group discussions, projects, and case methods enhance students' independent decision-making and analytical thinking skills.

Based on these views, it can be concluded that the integration of modular education and interactive methods is a modern and effective approach for optimizing the pedagogical process in higher education and for developing future teachers' professional and methodological competence. This approach ensures active participation of students and promotes independent thinking and professional growth.

**Methodology and Results.** The integration of modular education and interactive methods plays a crucial role in developing future teachers' professional competence. The main aim of the study was to determine the effectiveness of this mechanism and analyze the possibilities of its application in higher education



institutions. The object of the research was students of pedagogical specialties, while the subject was the process of developing professional competence through modular education and interactive methods.

The research hypothesis was that if future teachers are educated based on modular education and interactive methods, their professional competence and methodological skills will improve statistically significantly.

The following methods were used: questionnaires, interviews, observations, tests, case studies, group discussions, and project-based activities. These served as the main tools for assessing students' knowledge, skills, and activity. Each part of modular education was linked to specific competences and assessment criteria.

The experiment was conducted with students of a pedagogical program in a higher education institution. An experimental group of 60 students and a control group of 60 students were formed. Modular programs were designed, and each module had clearly defined objectives and outcomes. Interactive methods—case studies, projects, trainings, group discussions, and presentations—were applied to develop practical skills and independent thinking.

The results showed that all components of professional competence significantly increased in the experimental group. Test and observation results indicated that methodological skills increased by 25%, communication skills by 18%, reflective competence by 22%, and independent activity by 20%. Questionnaires also revealed students' high interest in interactive methods and active participation in modular learning.

These findings are supported by scholars such as Bloom (1956), Cowan (2000), Biggs (2003), Vygotsky (1978), and Silver (2006), who emphasize the importance of step-by-step development, independent activity, alignment of objectives and assessment, social interaction, and reflective learning in competence formation.

Thus, the study confirms that the integration of modular education and interactive methods is a modern and effective approach to improving the



pedagogical process in higher education and developing future teachers' professional and methodological competence.

**Conclusion.** The results of this study show that the integration of modular education and interactive methods serves as an effective mechanism for developing future teachers' professional competence. The experiment demonstrated a significant increase in students' methodological skills, communication skills, reflective competence, and independent activity.

Scholarly views also support these results. Bloom (1956) emphasizes the step-by-step development of knowledge and skills; Cowan (2000) highlights the role of modular and interactive integration in fostering independence and innovation; Biggs (2003) stresses the alignment of objectives and assessment; Vygotsky (1978) underlines the importance of social interaction; and Silver (2006) confirms the effectiveness of these approaches in developing reflective competence and decision-making skills.

Based on these findings, it can be stated that the integration of modular education and interactive methods is a modern and effective approach to optimizing the pedagogical process in higher education and developing future teachers' professional and methodological competence. These methods promote independent thinking, innovative approaches, and professional growth.

Higher education institutions can effectively organize the pedagogical process by implementing modular education systems and interactive methods, which increase students' interest and participation and prepare them for practical activity. Assessment and monitoring systems also play an important role in identifying students' activity and evaluating their competence levels.

Furthermore, organizing professional development seminars and trainings for teachers to prepare them for effective use of modular education and interactive methods is advisable. This is essential for developing students' professional and methodological potential and preparing them for practical work.



Overall, the research confirms that the integration of modular education and interactive methods provides an effective mechanism for improving the pedagogical process in higher education and for forming future teachers' professional competence and readiness for life and professional activity.

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