

## Preparing Future Agricultural Specialists for Professional Activities Based On a Competency-Based Approach

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### ABSTRACT

*The article explains that managing the quality of education in the educational process begins with identifying the necessary comments to master the learning outcomes. A competent approach ensures the quality of education and a modern education system. The competency-based approach serves to increase the activity of students. The teacher plays the most important role and role.*

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**Introduction.** In society, it is essential to have graduates who are ready to join the workforce, solve real-life and professional challenges, and contribute to production. These graduates must be prepared not only with knowledge, skills, and qualifications but also with additional qualities that align more with the modern educational objectives, including the concepts of “competencies” and “competence.” These terms refer to qualities that go beyond the mere accumulation of knowledge and skills and reflect the ability to adapt to the demands of real-world situations. A graduate’s competence is defined by what they are capable of, what areas they have mastered, and how ready they are to undertake professional roles. This approach, known as the competency-based approach, focuses on the practical ability to address challenges and navigate professional pathways.

The implementation of modern requirements for the professional preparation of graduates in the agricultural sector implies achieving the ultimate goal of education, which is the formation of key competencies. These competencies include generalized knowledge, skills, core competencies, and readiness to solve problems. The process involves the development of competencies across several domains—personal, social, professional, and specialized competencies—which determine a graduate's preparedness for high-level professional activity and readiness for innovation in their field.

The current development of agriculture directly depends on the professional readiness of specialists being prepared in this sector. According to the concept of higher education development until 2030, the country’s modernization and socio-economic stability depend on the ability to increase the quality of training for highly qualified professionals and to develop human capital in accordance with labor market demands. To achieve this, the introduction of virtual technologies and modern methods into the educational process is aimed at increasing the attractiveness of the higher education system for investment, ensuring international recognition, and enhancing its competitiveness on a global scale.

**Literature Review and Methodology.** As noted by N.A. Muslimov, learner-centered education involves organizing and implementing the joint educational activities of both teachers and students. This collaborative learning activity is not immediately or constantly presented in its finished form, and its content goes beyond just the knowledge acquired; it also encompasses the expansion of the boundaries of personal development. In the process of implementing learner-centered education, special attention must be given to the content, tools, and methods used, as they allow the student to demonstrate their ability to choose the educational materials, types, and forms during the learning process [1].

It is well known that the current development of agriculture depends on the professional readiness of specialists being trained in this sector. To ensure the development of professional competence among future agricultural specialists, this can be achieved through the integration of three main factors:

1. **Modular Approach Based on Core Competencies**: The educational content should be organized in accordance with the core competencies that reflect the specific characteristics of professional activities in the agricultural sector. This content should be structured and didactically adapted to ensure that it meets the objectives of the learning process.
2. **Organization of Learning Based on Activity**: The choice of teaching methods should align with the goal of education, focusing on active forms of learning that are directly related to the professional activities of future agricultural specialists. This ensures that the education process is tailored to real-world applications in the field of agriculture.
3. **Technologization of Education**: The continuous process of education and development is aimed at ensuring the full formation of a person's competencies. This can be achieved by using educational technologies that facilitate lifelong learning, thus promoting the holistic development of students [2].

These factors together contribute to creating a comprehensive and effective system of professional preparation for agricultural specialists, ensuring that they are well-equipped to meet the evolving demands of the sector. The integration of modern educational methods, technologies, and modular learning structures can significantly enhance the readiness of graduates for their professional careers.

**Results.** Competency-based education should be organized in such a way that the student is engaged in creative work both during their time in the classroom and outside it. The student should be able to:

- Find solutions to problematic situations;
- Defend their point of view and have a perspective on solving non-standard life and academic tasks;
- In their study and practical activities, demonstrate the potential to create a technological base for an innovative economy that focuses on the production of high-tech products, responding to the evolving market demands in Uzbekistan's scientific community.

The essence of the future agricultural specialists' preparation program is the implementation of a curriculum that not only prepares graduates for their professional activities but also supports the execution of fundamental and applied research, including innovation projects. Higher education institutions are seen as a developed sector of science, actively contributing to the production of knowledge in the field.

The primary focus is on virtual learning environments for training agricultural specialists, where the main categories of professional preparation have been analyzed. The content of the demands placed on agricultural specialists has been refined, and the effective use of virtual technologies has been explored [3].

Based on the objectives of the research, the following results were achieved during the study:

1. **Comparative Analysis of Trends in Professional Preparation**: Trends in preparing future agricultural specialists for professional activities in Uzbekistan were compared with those in the USA and European countries. The use of virtual learning environments was shown to improve the quality of the education process, enrich it with innovative content, and help develop students' independent learning skills. The foreign experience provided insights into how to further enhance the professional readiness of agricultural specialists.

2. **\*\*Current State of Professional Preparation\*\***: The current state of professional preparation for future agricultural specialists was studied, identifying strengths and areas for improvement.
3. **\*\*Application of IT Technologies in Agricultural Higher Education\*\***: The integration of IT technologies in agricultural higher education institutions was shown to enhance the learning process. The use of digital technologies as part of mandatory and elective courses was found to equip students with the practical skills necessary to implement new projects, creating opportunities for innovation in the sector.
4. **\*\*Study of Competency-Based and Traditional Approaches\*\***: The principles and characteristics of competency-based approaches, as well as their relationship with traditional methods, were studied. The research reviewed the opinions and perspectives of scholars from Uzbekistan, foreign countries, and CIS nations, providing a comparison of competency-based education with traditional educational models.
5. **\*\*Professional Competency as a Key Factor in Professional Preparation\*\***: The study highlighted the importance of professional competencies as a key factor in the professional preparation process. It emphasized the role of psychological services, as well as philosophical and psychological perspectives, in linking professional development with psychological readiness. Several recommendations and conclusions were made regarding the role of psychological support in preparing agricultural specialists.

These results confirm the importance of modernizing the training of future agricultural specialists through competency-based approaches, the integration of virtual technologies, and the application of digital tools in education, all of which contribute to enhancing the professional readiness and innovation capacity of graduates.

**Discussion.** The identified main types of pedagogical activities for future agricultural specialists have allowed for the identification of five interrelated components within their agropedagogical competence, which are essential for success in agricultural education:

1. **\*\*Cognitive Competence\*\***: This refers to the general pedagogical, methodological, and specialized knowledge that future agricultural specialists must possess. It also includes the degree of interest and engagement in teaching. This component ensures that students develop a solid foundation of knowledge and are motivated to continue learning throughout their careers.
2. **\*\*Creative Competence\*\***: This component highlights the ability to move away from rigidly pre-planned educational activities and encourages the development of critical and creative thinking in students. It involves fostering a capacity for innovative thinking, motivating students to generate new ideas, and transforming their attitudes towards education. Creative competence also focuses on encouraging students to strive for excellence and motivating them to achieve success.
3. **\*\*Learner-Centered Competence\*\***: This aspect of competence focuses on the student's individual characteristics, abilities, and development. It involves creating a teaching environment that considers the student's thinking and action strategies, and adapts the learning process to enhance their personal growth, cognitive abilities, and professional skills.
4. **\*\*Practical Competence\*\***: This involves the ability to implement specific methodological actions and the major types of pedagogical activities required for effective teaching. It also includes the capacity to modify these methods and strategies as needed to achieve the highest possible outcomes and quality in the educational process. This component emphasizes the importance of adapting teaching methods to achieve practical results.
5. **\*\*Motivational Competence\*\***: Motivational competence refers to the psychological readiness for pedagogical work, including the motivational drivers for teaching and cognitive activities. It encompasses the level of interest in teaching professional subjects, the motivation to engage in educational activities, and the desire to foster student engagement in the learning process.

## Conclusion

The identification of these five key components within the agropedagogical competence framework helps clarify the essential qualities that agricultural educators and future agricultural specialists need to develop in order to succeed in the field. The effectiveness of determining these competencies was demonstrated through experimental work carried out to measure the success rates based on these criteria, with statistical analysis showing a 15% and 13.3% improvement in the performance of the experimental groups. This demonstrates the positive impact of focusing on agropedagogical competencies in agricultural higher education.

The findings suggest that cultivating these competencies within both educators and students will contribute significantly to the professional development of agricultural specialists, helping them meet the modern challenges of the agricultural sector and contribute to the advancement of agricultural education.

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