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ON THE METHODOLOGY OF PREPARING FUTURE AGRICULTURAL SPECIALISTS FOR PROFESSIONAL ACTIVITY IN A VIRTUAL LEARNING ENVIRONMENT

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Abstract
In the article, in order to ensure the quality of education, it begins with the identification of the necessary results of education. A competent approach is the quality of education in the modern education system. A competent approach is a ministry of students. Educational activity is important.

Keywords: higher education, approach, competence, agriculture, cognitive, motivational, creative education, practical education.

Introduction

The strategy for the development of Uzbekistan's agricultural sector emphasizes "including important priority areas for agricultural development, specifically reducing state participation in sector management and strengthening the role of market mechanisms, ensuring the sector's investment attractiveness, and training qualified specialists." This task focuses particularly on improving the methods for preparing future agricultural specialists for professional activity and enhancing the effectiveness of this preparation to train highly qualified personnel.

The concept for developing the higher education system until 2030 highlights the priority of "raising the quality of educational content to a new level, establishing a system for training highly qualified specialists who contribute to the sustainable development of social and economic sectors and who can find their place in the labor market."

The necessity for scientifically based intensive development of agriculture, the training of competent personnel, and the improvement of methodologies for using virtual technologies to develop the professional competencies of future agricultural specialists are of great importance in achieving positive educational outcomes.

Although virtual teaching technologies based on a competency-based approach and the theoretical conceptual foundations of pedagogical competencies have been somewhat studied in higher education institutions, the need to improve the methodology for preparing future agricultural specialists for professional activity remains urgent. It is necessary to develop and implement theoretical and methodological foundations for the effective use of simulation and virtual technologies (graphic visualization and 3D modeling), as well as Personalized Learning technologies in professional training. This need defines the relevance of the research topic.

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Literature Review and Methodology

The theoretical-methodological foundations of preparing future specialists for professional activity in Uzbekistan, as well as the theoretical, conceptual, and technological bases for monitoring the professional activities of production workers, have been studied by R.Kh. Djuraev, Sh.E. Qurbanov, N.A. Muslimov, Q.T. Olimov, O.Kh. To'raqulov, E.S. Seytxalilov, J.A. Hamidov, B.B. Ergashov, and D. Khimmataliev.

Research on the scientific-methodological foundations of applying new methodologies in the educational process, as well as on developing the professional competence of teachers in the field of vocational education and creating methodological support, has been conducted by A.R. Khodjabaev, Z.K. Ismoilova, H.F. Rashidov, S.Yu. Ashurova, Sh.S. Sharipov, H.Sh. Qodirov, M.B. Urazova, and O.A. Qo'ysinov.

Results

In this research, based on a scientific-pedagogical approach and criteria for forming professional competence, levels of professional competence were determined, and simulation, virtual technologies (graphic visualization and 3D modeling), and Personalized Learning technologies were used.

The focus of virtual learning technologies on personal development, combined with the use of Personalized Learning, led to effective utilization of agricultural machinery and technical readiness for their application in the field.

Relying on the methodology used for improving the professional competence of future agricultural specialists based on simulation, virtual, and Personalized Learning technologies, the methodology for their application was further refined.

Discussion

The current development of agriculture is closely linked to the readiness of specialists being trained for professional activity in this sector. The concept for developing higher education until 2030 envisions improving the quality of training highly qualified personnel to modernize the country and ensure sustainable socio-economic development, as well as developing human capital based on labor market demands. To achieve this, it is planned to increase the investment attractiveness of the higher education system and ensure its international recognition and competitiveness by introducing simulation, virtual, and personalized learning technologies, along with modern methods into the educational process.

The virtual learning environment enhances the quality of education, enriches it with innovative content, and helps students develop the skills to independently acquire new knowledge. The areas of applying IT technologies in agriculture include "smart farming," "smart farms," "smart greenhouses and raw material management," storage of agricultural products, efficient use of agricultural machinery, "Big Data," and others. Agricultural specialists gain skills to apply digital technologies based on compulsory subjects during their education, and they have the opportunity to use these technologies in practice and develop new projects.

The main focus is on the educational activities of agricultural specialists in the virtual environment. For this purpose, trends in preparing agricultural specialists for professional activity in foreign countries such as the USA and European countries have been identified.

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In the USA, specific requirements for future agricultural specialists are prioritized: competence in designing solutions to complex agricultural problems considering social consequences and ecological safety for people; competence in working with individual team members; competence in solving professional problems with a group of colleagues; and so on.

In Europe, the following requirements are placed on future agricultural specialists during their professional activities: competence in developing creative ideas to solve agricultural problems; the ability to use the thinking of agricultural specialists to create a safe environment for human life; readiness to develop new forms and methods for solving problems in the agricultural sector; competence in setting goals and developing strategies to achieve them, among others.

In Uzbekistan, the following requirements are set for future agricultural specialists: competence in accumulating interdisciplinary knowledge; competence in using computer technologies and other means of communication and information, including telecommunication networks; competence in creatively solving professional agricultural problems; lifelong learning competence; and the ability to solve professional problems based on virtual technologies, preparing future agricultural specialists in accordance with labor market demands.

One of the main directions for the rapid development of the agriculture and water management sectors is the effective and proper use of agricultural machinery, its modernization, and the application of new machinery and technologies in production processes based on scientific and technical progress recommendations. Therefore, the training of agricultural specialists using pedagogical and information technologies, as well as interactive methods of educational work, requires the creation of scientific-methodological didactic support.

Understanding the basic skills of computing, information tools, and information literacy, as well as understanding the functions of information providers (such as libraries), ensures professional competence.

Conclusion

To improve the quality of the developed didactic materials during the research, the Kompas-3D three-dimensional modeling software was used to enhance the perception of graphical information. Kompas-3D allows creating drawings, sketches, diagrams, parts, and mechanism models, as well as presenting them in lectures, practical, and laboratory classes.

Unlike previous methods, the visualization is as informative and detailed as possible. This is achieved through system tools and transferring object information from the three-dimensional model to planar drawings, as well as using flat drawing and editing tools (local sections and cuts, associative views, axonometry, and others).

In summary, the simulation and virtual learning technologies proposed by the author, along with the Personalized Learning technology focused on personal development, ensure technical informational preparedness in professional activities of future agricultural specialists during technical situations.

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