

Суармалы жерлердің құрғату жүйелерін жақсарту бойынша алқапта тік құрғату ұңғымалары тұрғызылған. Суы аз жылдары су алу ұңғымалары суармалы жерлердің сумен қамтылуын жақсартуға және елді-мекендердегі (Бөген ауылы) жер асты сулары деңгейін төмендетуге арналып жасалған.

Кілт сөздер: суармалы жерлер, сумен қамтамасыз ету, ирригациялық аудан, тік құрғатқыш, ұңғыма, жер асты сулары.

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PROBLEMS OF WATER SUPPLY OF THE ARYS-TURKESTAN AREA AND WAY OF THEIR DECISION

Annotation

About a half of the irrigated lands of the Southern Kazakhstan area are concentrated in the Arys-Turkestan irrigational area. Considerable anthropogenous load of the irrigational area causes its intense water balance. In shallow years the lack of water is transferred generally to agriculture (the irrigated agriculture) which sustains thus substantial damages. Sources of an irrigation of a zone of the Arys-Turkestan channel are the rivers Arys and Bugun. The Arys-Turkestan irrigating system consists of the Karaspan water intaking water-engineering system on the river Arys.

For improvement of fitness of the irrigated lands on the massif wells of a vertical drainage were constructed. In shallow years, water wells lowerings of the level of ground waters in settlements (s. Bugun), and for water supply were based as for increase of water security of the irrigated lands.

Key words: The irrigated lands, water security, the irrigational area, a vertical drainage, a chink (well), ground waters.

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INNOVATIVE EDUCATIONAL TECHNOLOGIES IN HIGH EDUCATION

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Abstract

The article discusses problems and peculiarities of teaching physics in the agricultural universities in credit technology of training.

Key words: competitive specialist, professional competence of a specialist, innovative didactic system, universal organizer tutorial, a set of practice-oriented textbooks, flexible educational-methodical complexes.

Introduction

Due to the increasing skill requirements in the current market conditions and the need for training of competitive specialists of agricultural profile, at the same time with the shortage of

contact time with the credit technology of education arose the need for new approaches in teaching fundamental disciplines such as physics, mathematics etc. This is possible with new innovative approaches to methodological support and strengthening of a role of independent work of students.

The main task of higher education is the formation of the creative personality of the specialist, capable of self-development, self-education, and innovation. The solution to this problem is hardly possible only through knowledge transfer in finished form from teacher to student.

In his Message to the People Kazakhstan, President of the RK N.Nazarbayev said «that the higher education system should be aimed at getting students professions, knowledge and skills relevant to the world level, to prepare a competitive and meet the requirements of the labor market of graduates of the university» [1].

After all, the ultimate goal of education and the main characteristic of its quality - is the professional competence of a specialist. Competitive specialists [1] should be able to analyze and create a physical and mathematical models of applications, have abstract thinking and imagination. The solution to this problem is hardly possible only through knowledge transfer in finished form from teacher to student.

- «In the course of modernization of the education system, it is important for us to implement the following measures. First, to introduce modern methods and technologies into the learning process. Secondly, it is important to improve the quality of teaching staff. It is necessary strengthen the standards of basic pedagogical education, the requirements for improving the qualifications of teachers in schools and universities» [1].

Object of study

Need to transfer a student from a passive consumer of knowledge in their active creator, who can formulate the problem, analyze the ways to solve it, to find the optimal result and prove its correctness. The on going reform of higher education is inherently linked with the transition from «paradigm of learning» to the «paradigm of education».

The learning in agricultural universities in credit technology of education, as well as in other higher educational institutions training is conducted in two or three level: Bachelor's, Master's and Doctor PhD.

Along with the advantages of credit technology - the possibility of an independent choice of learning paths and receive two degrees for two specialties, the choice of elective courses, etc. there is a significant drawback - limited hours in the classroom, that is, in the credits, in connection with this greatly reduced the number of hours or credits for general educational fundamental courses - physics, mathematics, etc.

The contradictions between the growing volume of information subject to assimilation and the need for high quality and deep knowledges, between the creation of the information environment, the multi-profile specialist training and lack of methodological support and classroom hours, between the «fundamental component» of educational and of the professional interests professions require new approaches to quality training.

There is a problem of optimal balance between basic and of vocational component of education fundamental education, the need for flexible higher educational and in-depth scientific thinking to a holistic perception of the world, while at the same time, the adaptation of a specialist on the for rapidly changing socio-economics condition's, should be directed to the solution of professional problems specialists. An important link in solving these problems is the quality of physical and mathematical education of graduates of agricultural colleges and universities.

Goals and objectives of the agricultural university in physic teaching - to give students a clear understanding of the physics problems whose solution is now being successfully applied in the technical development of the agricultural industry ccomplex (AIC). The development of techniques and skills of the experimental research of physical phenomena in the laboratory and practical sessions on physics help in the future to solve specific engineering and practical problems agrotechnical mashin and technology.

This is very difficult with the current allocated loans for basic training in physics discipline under the standard physics program and Sample program on Physics. For example, only 2 credits were allocated for the specialty of 5B080600 - Agricultural machinery and technology, and 3 credits for the specialty 5B081200 -Energy supply to Agriculture [2]. These specialties are basic for all agricultural universities in Kazakhstan, including for the Kazakh National Agrarian University. Earlier, 3, 6, 8 credits were allocated for the study of physics in engineering, technical and agrarian specialties. The knowledge of physics are as a methodological basis of scientific knowledge to be a major component of most educational and special disciplines of Agricultural Universits. Such as agricultural machines, theoretical fundamentals of electrical engineering, electrical drawings and schemes, agricultural machinery and technology, tractors and cars, electric drive, wiring and equipment and others.

As a result studying the physics, students are also studying of fundamentals physical laws and phenomena occurring in nature, and also learn the physical principles and mechanisms underlying the specific real-world production, field conditions and processes. When the study of physics students master basic physical methods of investigation, study own to reproduce and analyze them, working with modern physical instruments, learn to identify the permissible error of measurement and mathematical data processing experiments.

Results and discussion

Due to the reduction in the allocated hours (credits) of universality and shortness of the course and the shortage of training classroom time, we need new approaches to the development and implementation of physics teaching that will allow us to achieve high-quality knowledge and skills.

The development of creative abilities of students, future scientists – agricultural engineers due should occur to an increase of their individual work under the guidance of a teacher - independent work under the guidance of a teacher and outside the auditor classroom (self-study students). In this regard, it should be recognized that the independent work of students (self-study students) is not only an important form of educational process, and should be its foundation. This suggests an orientation to the active methods of acquiring knowledge, developing creative abilities of students, moving from the general of education on individual learning needs and opportunities of the individual [3].

It is not just an increase in the number of hours for independent work, the role of the means, a fundamental review of the organization of educational process in higher education, which should be designed to develop the ability to learn, to form a student the ability to self-development and creative application of acquired knowledge, ways of adapting for professional careers in the modern world.

Active students' individual work is possible only if a serious and sustained motivation. The strongest motivating factor - preparation for further effective professional work.

Setting and study on a flexible multidisciplinary instruction in physics, as an innovative didactic system that forms the professional competence of graduates of agricultural university, due to the needs of modern high tech industry, characterized by the use of automated control systems, the general computerization of production processes, complexity, and intellectualization of the professionals' agronomists, of agricultural engineers, of power engineers, of systems analysts, and many other agribusiness professionals.

To create an information environment that optimally shaping the professional competence and applied physics needed unconventional approach to the formation of the didactic system – the educational and methodical complex and the writing of textbooks and teaching materials of new generation.

Created and developed an innovative didactics system is characterized by professional mobility, flexible methods of ownership of the science study, the ability to use the basic physical concepts and laws to control the specific production processes.

It offers training a specific of students the fundamental physical and mathematical methods to tackle professional tasks, and is the target, content, procedural and organizational aspect of innovative didactic system.

The main subsystems of flexible didactic system is an innovative didactic purpose complex, which consists of a flexible universal program and universal instructional kit for students, intensive technology trainings, as well as the «rating system» of educational achievement. Using the «rating system» allows students to work smoothly and systematically throughout the semester, and also activates cognitive activities of students, stimulating their creativity.

It can be very useful, the use of test control of knowledge and skills of students, which is characterized by objectivity, saves time, allows you to significantly individualize the learning process by choosing individual tasks for practical and laboratory exercises in physics.

It is also proposed for teach physics to actively use the increasingly penetrating into the educational process and training automated systems learning that allow the student to self-discipline to study and simultaneously control the level of mastery of the material.

Using these techniques along with traditional forms of control - colloquium, test, exams can cause an increase in teacher workload due to additional work on the structuring of the content of physics, the tasks of varying complexity, etc. However, this work allows the teacher to open his creative educational opportunities and realize his ideas on improving teaching and learning on the basis of modern innovative educational technologies.

After a decisive role in the organization belongs to the teacher training, which should not work with the student «in general», but with a particular personality with its strengths and weaknesses, individual abilities and inclinations.

At the same time the decisive role in the organization of training belongs to the teacher training and his creative approach to learning. The teacher should not work with students in the classroom «as a whole», but with a special individual personality with its strengths and weaknesses, individual abilities and inclinations.

The task of the teacher is to see and develop the best qualities of the student as a future professional qualification. The purpose of teaching in higher education, as already mentioned - to teach students to work independently and meaningfully with the material first, then with the scientific information to lay the foundations of self-organization and self-education in order to instill the ability to continue to constantly improve their skills.

The information model of the proposed innovative didactic system in physics is a universal didactic complex of materials, which is a set of educational materials built in a modular way.

The layout allows us to express in a compact and accessible form a brief information with the support of notes to all the theoretical materials on physics and its practical application.

The «reference materials» system is used to compress information on physics for repetition and training, «Notes and supplementary studies» allow the student and teacher to effectively use the study to concentrate on in-depth presentation of the course, if necessary.

For the student, «reference notes» are a didactic highlighting of the most important standard in the topic under study and a guide to voluminous textbooks on physics. Not cluttered

with long explanations and visual images, it becomes the basis for the perception and subsequent consolidation and restoration of learning materials in memory. For a student, short didactic material is the most important standard in a discipline, oriented to voluminous and not always available textbooks. Not cluttered with long explanations and visual images, it becomes the backbone of perception and the subsequent consolidation and restoration of the memory of the teaching material. In the «supporting summaries» will be a frontals application of modern physical and mathematical symbols, an algorithmic method of presentation, the method of integration of didactic units and the concentration of knowledge for development of logical thinking and contribute to the verbal formulation of quantitative relations bringing knowledge accessible and understandable form.

The general textbook in the innovative educational material, which provides information about the training modules for the creation of which the following requirements for writing textbooks - the «organizer» of systematic cognitive activity of students is a «compass» in the sea of educational information accumulated by mankind, a means of self-management of students' independent work.

The second component of the «case study» is a set of practice-oriented teaching materials designed for teaching students the use of theoretical knowledge to solve practical problems and learning in auditorium during the self-study students, and a set of tasks allows for the preparation of any of the specialties of the agrarian structure.

Construction of information bases will be governed by the principle of integrity, consistency and systematic, accessible through the inductive and deductive methods of presentation, the abstract and the concrete, the realization of didactic rules «from simple to complex». It is possible to expand the textbook on physics to create separate teaching aids, deepen, complicate or expand its component modules, for example, to prepare masters. To develop a complex of methodological support of the educational process in physics is necessary for effective training of future specialists in special disciplines.

Such a complex physics texts include lectures, training and teaching aids, laboratory workshops, a collection of tasks and objectives, formulated on the basis of real data, the bank simulating real processes applications, automated training and monitoring systems in physics and related special disciplines, as electronic multimedia, as well as mobile and flexible educational and metodical teaching aids education for each specialits agricultural university.

Conclusion

Thus, we can conclude that new innovative educational technologies allow students to make the most effective use of educational and methodical literature and materials; to acquire professional knowledge; to develop problem-search thinking; form a professional judgment; to intensify research work; To expand the possibilities of self-control of the acquired knowledge. Teachers - promptly update educational and methodical literature; to master and introduce modern teaching technologies; expand the ability to control students' knowledge. The use of new educational technologies makes it possible to improve the quality of existing technologies for training specialists in higher education and ensure the improvement of the quality of education and training of specialists, and therefore, the competitiveness of the university as a whole in the market of educational services.

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ЖОҒАРҒЫ БІЛІМ БЕРУ САЛАСЫНДАҒЫ ИННОВАЦИЯЛЫҚ БІЛІМ ТЕХНОЛОГИЯЛАРЫ

Андатпа

Мақалада оқытудың кредиттік технологиясы қолданылатын аграрлық университеттерде физика пәнін оқытудың мәселері мен ерекшеліктері қарастырылады.

Кілт сөздер: бәсекеге қабілетті маман, маманның кәсіби құзыреттілігі, инновациялық дидактикалық жүйе, әмбебап ұйымдастырушы оқулық, практикалық бағыттағы оқулықтар жиынтығы, икемді оқу-әдістемелік кешендер.

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ИННОВАЦИОННЫЕ ОБРАЗОВАТЕЛЬНЫЕ ТЕХНОЛОГИИ В ВЫСШЕМ ОБРАЗОВАНИИ

Аннотация

В статье рассматриваются проблемы и особенности преподавания физики в сельскохозяйственных университетах при кредитной технологии обучения.

Ключевые слова: конкурентоспособный специалист, профессиональная компетентность специалиста, инновационная дидактическая система, учебник-универсальный организатор, набор практико-ориентированных учебников, гибкие учебно-методические комплексы

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INNOVATIVE VENTILATION SYSTEMS OF SHEEPFOLDS FOR LAMB

Abstract

The article discusses the results of experimental studies of an energy-efficient innovative sheepfold ventilation system, using an information-measuring system for remote recording of thermo-technical parameters of ventilation systems. The results of tests of an experimental energy-efficient ventilation system in winter and summer periods are presented. A description is given of an experimental energy-saving ventilation system for lambing sheepfold.