# SPECIFIC USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE FORMATION OF CONTENTS ENERGETIC PROFESSIONAL FUTURE AGRICULTURAL PRODUCTION

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Describing the current state and organization of educational process of high school, many scientists and researchers noted the failure of subject learning systems provide the necessary quality of training in conditions of rapid scientific - technological development.

It is generally a contradiction between the outdated forms, methods, means and needs of higher education institutions in the implementation of new educational software technologies. Find the most rational forms and methods of forming and skills in students is one of the most important tasks of high school, which depend on a comprehensive and quality training of future specialists. It is this resource provides a significant performance improvement of teacher training, particularly through the design, modeling, organization of stimulating educational problems and their solutions, which is a prerequisite for effective self-identity of the student.

The priority of improving the system of training in higher education is the use of information - communication technologies (ICT). It is about creating certain technical environment in which the key position occupied by information technologies that serve as the object of study.

**The purpose of research** - to identify and analyze the most effective uses of ICT in the professional training of Energy agricultural production, evaluation capacity use specialized software for laboratory works with electrical disciplines.

**Materials and methods research**. Professional training of specialists requires rethinking goals, objectives, content and teaching methods to meet the new challenges and prospects for social development. There is a need for a

departure from the classical methods of teaching and the approach to the problem - oriented methods of generating knowledge.

The writings of Alexander Dolzhenko, Nahrinoho Yu, N. Talyzina and others. stresses the importance of convergence of the system of professional training of professional system of future graduates.

Achieve a new level of training in higher education is impossible without modern teaching and information technology. Be aware of modern information technology - an urgent requirement for highly qualified specialists.

Many educators and scholars are fundamental research problems of efficiency of training specialists based on the use of information - communication technologies. Among them should be singled out: V. Bykov, S. Velichko, M. Golovan, Yu peas, Zhaldak M., V. Klochko, S. Rakov, Ramskoho Yu, J. Robert N. Tverezovsku, V. Shavalovu etc. .

However, analysis of scientific - pedagogical literature suggests that the ability of information technology in the learning process and not used haphazardly. In recent years the development of modern education and software development significantly ahead of the possibility of a full-scale methods for their implementation. The result is incomplete elaborated specific characteristics of training in high school.

**Results.** The task of higher education include the development of professional, creative and wind potential of the young man. Development of a nonequilibrium processes through the interaction of two contradictory trends: maintaining stability of the system and search for new effective forms of organization to make better use of external energy. Regarding the content of training professionals, this means not only energy efficiency but also time and resource information.

As a general concept, the expert determines a person who has professional knowledge, tools and skills specific occupation according to educational - qualification. Qualification is an integrated feature professional quality work,

which is conditioned by its level of education and professional training on a particular specialty.

Today it is impossible to equip students with all the knowledge and skills that will be required for further work. So the question is not only to determine the level and volume obtained expertise but also global competition and skills - the ability to navigate freely in cyberspace, or quickly learn from their skills.

Graduate opportunities in relation to perception, processing and understanding information should not be lower than the number and variety of information that is necessary and sufficient for the effective performance of production functions. In particular, these opportunities for professional development level due to its receptors and related tools, providing a receipt, selection, systematization and storing relevant information.

For example, the occurrence of atypical situations caused significant stochasticity conditions, possible internal and external counteracts often requires changing norms and tactical goals of creative resolution of production problems. Because modern production requires professionals with the following qualities:

- The ability to see problems and their causes;
- The ability to highlight key areas, the ability to focus on the main;
- The ability to intuitively identify key information in its imaginary diversity;
- A combination of abstract and logical thinking.

Based on the above content by professional training, we mean a system of educational information and independent work, to form the students professionally significant features, the assimilation of the methodology of future performance and accumulation of initial experience professional fulfillment functions according to the educational qualification of the expert.

Active students predetermined desire to acquire knowledge and skills provided by the mobilization of the reserve and the corresponding motivation.

Given the diversity and dynamic operating conditions, it is important to ensure flexibility of professional training, that is, its ability to adapt to the dynamics of production conditions and industrial relations.

Training specialists by means of information and communication technologies provides students with the opportunity to acquire higher quality education.

Studies V. Klochko emphasized that the use of information technology should be to address the elimination of contradictions between professional education and its adaptation to production.

Thus, in the process of teaching students professional electrical disciplines raises a number of challenges, among which stand out:

- Improving learning through motivation and activation of perception;
- Individualization of instruction;
- Gradual realization of educational material on probation - professional level mastering;
- Systematization of knowledge;
- Creating an environment conducive to learning;
- Focus on practice.

The use of ICT makes it possible to monitor students' knowledge in all phases of learning, thus providing the necessary feedback between teacher and students, which will increase their level of knowledge.

The effectiveness of each of the tools of information technology can be viewed from different perspectives: in terms of applicability in different organizational forms of education for students' independent work; on ease of use during training sessions in preparation for them; matching the content of the course and the forms and methods of the model object of study; motivation for the establishment of a study of educational topics section and subject as a whole.

In practice, by the task is to equip schools with modern facilities and educational multimedia educational software.

Multimedia products offer wide opportunities for various aspects of education, including allowing visually display information that is difficult to explain only through verbal methods, such as charts, sections, structural performance, processes, events and more. They are useful for the effective organization of classes taking into account the specifics of the subject, the development of student skills research and creative activity, the approach to real work situations by creating computer models.

Multimedia technology can be seen at the same time as the training and communications.

Thanks to the Internet expand ICT access to a lot of reference material and the latest information.

The most significant attributes for validation of multimedia technologies for use in the educational process is the degree of compliance software general didactic requirements taking into account characteristics of training.

Given the experience of teaching special electrical disciplines and methodological feasibility should single out the most effective uses of ICT in the bachelors Energy agricultural production:

- Organization and conduct computer experiments with virtual models;
- Processing of experimental results;
- Implementation programming model and management of technological objects and systems;
- Implementation of automated control of training activities;
- Development of educational software for various purposes;
- Providing a focused search for information in various forms of local and wide area networks, its accumulation, storage, processing and transmission;
- Development of teaching and didactic materials using multimedia resources;
- Development of web - sites for educational purposes.

Process intensification of training activities largely determined by the quality of educational software used. Software is an individual or interrelated software

products, which include artificial intelligence, computer graphics systems, word processing, spreadsheets, database management systems, expert systems, operating systems, programming languages, software packages and others. The main requirements for such software should be easy to use, user-friendly interface and visualization of experimental results.

It is known that engineering has two major trends: focus on science and focus on practice. Approaching learning to real work situations, modeling specific manufacturing processes effectively promote interest in the study of professional disciplines.

The most convenient software tool for setting scientific experiment is MatLab software system with integrated tool packages (Simulink, Power System Blockset, Stateflow, etc.). Application of MatLab positive results in the discipline "Theoretical Foundations of automation", "Theoretical Foundations of Electrical Engineering", "Digital control systems", "Basic electric" and so on.

Important when preparing bachelors Energy agriculture is a focus on productive activities. Graduates should be familiar with modern systems of power, automation and electrification of agricultural production.

Because the company is constantly updated and changing park electrical equipment and controls, so the goal is quality and deep representation of this information to students.

Today in the manufacturing sector interaction between the operator and the process by using software, which has been generally termed SCADA. SCADA - system (Supervisory Control And Data Acquisition System) - a system of data collection and operational control system.

The main functions of this system is to collect information about the process, providing the operator interface, storage history of the process and the implementation of automatic process control in the extent necessary and possible. The choice of SCADA-system is a complex task. Basically acquaint future specialists in operation and design of automated systems based on SCADA carried thematic courses of various manufacturers of these systems. The most famous

SCADA - packages used in production: Genie, Genesis, Trace Mode, UltraLogic, WinCC. At this time in the curriculum of a number of higher education institutions have begun to introduce discipline related to the study of SCADA-systems. Yes, NUBiP of Ukraine "Berezhany Agrotechnical Institute" during the laboratory work on the course "Automation of technological processes" are widely used products and Trace Mode UltraLogic.

Implementation of the education system modeling and analysis of specific work situations is essential tasks aimed at improving training. In the course of this study lays a foundation for a new type of professional thinking to help decide the future specialist in unusual situations, to evaluate the positive and negative consequences of their implementation.

Based on the experience of teaching specialized electrical engineering subjects and analyzing the curriculum in the direction of 6.100101 "Energy and electrical systems AIC" determined that the most appropriate and effective to laboratory practical training courses, combining field experiments and specialized software (Table).

**Specialized software laboratory practice of electrical engineering disciplines**

| Subjects | Subjects recommended specialized software laboratory practical |
|---|---|
| Theoretical foundations of electrical, | MatLab, MathCad, Electronics Workbench, |
| Electronics and microcircuitry | Electronics Workbench, P-CAD, Accel Eda |
| Instrumentation of Metrology | LabView, Electronics Workbench, MatLab |
| Electrotechnology and lighting | DIALux, Электрик, MatLab |
| Theoretical Foundations of automation | MatLab, LabView, MathCad |
| Digital control systems | MatLab |
| Automate processes | Genie, Trace Mode, UltraLogic, |

| | |
|---|---|
| | LabView |
| Fundamentals of electric drive | MatLab |
| Fundamentals of electricity | MS Excel |

Feasibility of using information technology in the learning process due to the fact that they help to establish a process of interaction with students, provide access to educational resources in the most convenient format, and motivate students to learn.

However, the introduction of advanced information technologies require the implementation of a number of conditions, including the presence of appropriate software, Fluent teachers and students computers, removal of a part-time teacher for the development of information - methodical maintenance study discipline, scheduling of students with information system.

In our view, the most important is the issue and determine the best combination of information technology opportunities that occur in major provides students with particular subjects in the existing education system, with promising gradual upgrade training system engineering graduates as a whole.

## Conclusions

The combination of theoretical and practical training, integration training research and experimental work in the major contributing orientation training, active search and implementation of forms and methods of teaching students of educational software, a cohesive personality future professionals. Only a comprehensive implementation methodology, organizational, psychological and pedagogical conditions can solve the problem of training qualified specialists with energy.

Among the factors that improve the efficiency of power engineering professional future agricultural production priority is the use of ICT oriented production activities. Therefore, actual future direction of development outlined

the problem is to build a model of teaching students professional electrical engineering disciplines using modern information technology training.