

Formation of research culture of students in the teaching of physics in higher education

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Abstract. In the article the possibilities of development of research culture of students of non-skew professional pedagogical education. The research culture of students is a brief description of his level of qualification for his selfsocialization, his abilities, skills and knowledge. He also demonstrates that education, knowledge, and skills in research culture the basis for the training of future teachers and are important for the development of the individual. Scientific - research culture of students of non-spry professional pedagogical education.

1 Introduction

One of the most important in the strategic program of the country "Kazakhstan - 2050" is the education of highly intelligent young people, their contribution to the improvement of their social status. Today, one of the ways to explain the subject to the younger generation is the basics of new technologies. At the same time, it is important to pay attention to the ability of the younger generation to use the media.

President Nursultan Nazarbayev [1]: "Those who will work and live in the future are today's schoolchildren, and Kazakhstan will be at the same level as the teacher brought them up. Therefore, it was said that "the task of the teacher is difficult." The modern teacher is required not only in-depth knowledge of the subject, but also historical knowledge, pedagogical and psychological literacy, political and economic knowledge and mastery of all information technologies. He is considered to be a leader with high skills and knowledge only if he has a passion for innovation in education, creative work, mastery of new teaching and learning technologies.

In modern conditions, one of the main issues in general education, especially in higher education, is the education of highly educated, intelligent, well-developed, free-thinking, creative, moral, patriotic young people, forming a culture of research. This requires the definition of certain levels of requirements for teachers who pass on the experience of mankind to young people.

Efforts to reach the world level in the system of higher education, the emergence of new types of educational institutions based on various professional programs, the introduction of new types of structures and information technology in higher education - a prerequisite for training future professionals in accordance with international standards. conditions.

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The strategic goal of the system of continuous multi-level research education of the republic is to train graduates to be competitive in the international labor market, the level of quality of education. Achieving this goal is in line with modern requirements, equating the state standard of education with international standards of education, providing qualified professionals with advanced professional skills, stimulating civilized scientific and methodological direction, providing new basic textbooks, informatization of professional education, etc. Systematic work in the field of education is one of the most important and urgent tasks in the country.

2 Materials and Methods

The system of professional education in higher education is a complex, integrated pedagogical system. As a result, it is planned to raise the professional to the level of a self-transforming subject, and ways to form a culture of appropriate research in the course of training have been identified. Professional training of future teachers differs from traditional training: in the purpose, essence, content, key factors of development, the role and function of the teacher in higher education, pedagogical methods used, the form of student learning activities, research culture, teacher-student interaction, their in the nature of communication, in the organization of the process of training, combining professional knowledge and skills, etc [2].

The importance of professional training of future teachers in higher education is characterized by modern requirements to the personality and profession of the specialist. This necessitates the orientation of the educational process of the university in such a way as to constantly improve the general and professional research and creative skills.

Scientific and technological progress and the development of production technology in the era of economic prosperity require a steady stream of well-developed, active, independent and creative young people. Therefore, the main goal in the field of education is to train intelligent, research-oriented, well-developed, able to work creatively, able to decide their own destiny, self-education and self-improvement skills by raising the level of the educational process is.

In the process of traditional learning, students' research culture, enthusiasm and energy are mainly focused on the subject content of teaching, and the theoretical and cognitive aspects of the acquisition of scientific knowledge are ignored, as a result, students do not master it enough. Training has educational, cognitive and developmental functions. If knowledge, skills and abilities are formed in the educational activity depending on the discipline, in the cognitive activity the ways, sources and methods of scientific cognition are mastered. And the developmental activity of teaching depends on the organization of intellectual and research activities of students in the process of learning.

Radical changes in society have introduced many innovations in the modernization of the education system. There is no doubt that the source of the mechanism of strengthening the connection of higher education with science, new ideas and new information technologies of education, new content of education, the self-development of professional education is in the work of teachers.

The role of modern educational technology in the system of professional activity of teachers is special, because each teacher achieves good results in the development of new technologies, expands and raises the level of their professional knowledge. At the present stage, the degree includes the following changes [3].

- focus on the development of human cognitive activity;
- the transition of the individual's needs and requirements to the educational process;
- allowing individual-oriented learning to unfold.

Every year has its recommendations and it is a great goal to keep up with the times. In this regard, in educating young people to the culture of research, it is necessary to look for ways and means of rapid development, as the intellectual giant Abai said, "I looked for science, I looked for the world, I looked in both directions." It is known that new ways and methods of teaching and education, continuous processes, new projects are being developed and implemented in advanced countries. Its results can be found in many ways. Therefore, we need scientific management in the training and teaching of future physics teachers.

This means regular updating of the physics education system. The purpose of systematic updating is to substantiate didactic, methodological mechanisms for clarifying the status of the individual in education.

The effectiveness of the ongoing innovations in the field of general physics education in this area depends on the breadth of the scientific worldview of teachers, the enrichment of the spiritual world, the new organization of professional activity.

Professional training of future physics teachers begins in the walls of higher education institutions. Well-known teachers on the issue of improving the professional training of teachers: Davydov VV, Babansky YK Arkhangelsky SI, Kuzmina NV, Kraevsky VV, Talyzina NF etc. devoted their psychological, pedagogical and methodological works.

Theoretical and methodological training of a future physics teacher cannot be an indicator of his professional competence. It is important for a teacher to know how to acquire and master knowledge, where and how to use it effectively, to what extent he can think for himself and draw the right conclusions. Therefore, they need to be armed with scientific methods of researching the structure and function of knowledge in physics, the laws and rules of logical thinking, methods of reasoning, its scientific laws, the validity or refutation of scientific theories.

In addition, future physics teachers must know the theory and methods of formation of this knowledge for students, as well as their own. This allows students to form a deep and systematic knowledge, to further develop their creative activity, through the deliberate training of future physics teachers in order to improve the theoretical and methodological knowledge of students.

Therefore, with the widespread use of new pedagogical technologies in the teaching of physics, we should consider the most effective forms of teaching, such as ways to deepen and comprehensively master knowledge, problems of mastering the scientific basis of physics, the development of thinking and creativity. To be able to improve the knowledge structure using different options of didactics, to create a scientific basis for new ideas and information technology of practical evidence, new concepts and ideas require to improve the research professional training of teachers [4].

3 Results

The main features of the new system of education are: training of teachers capable of designing different levels of education and professional activity. A teacher who thinks in a new way must be ready to learn new ideas, including new information technologies, and to master those educational technologies.

In order to achieve a high level of professional training of future physics teachers, special requirements are set for students of pedagogical institutes and universities, we need to train specialists with high research skills to master new teaching and pedagogical technologies in education, the main features of the new education system.

Thus, the problem of professional development of the specialist, as well as the reform of higher education in the development of modern intensive pedagogical and information technologies belong to the category of multifaceted and multifaceted problems. Scientists

and educators have always been concerned about the provision of higher education with a high scientific and professional level.

The problem of vocational training should be solved mainly in the process of joint efforts of teachers and students. Quantitative changes in the accumulated professional knowledge and skills of students in the transition from course to course appear in the future qualification of graduates - a new qualitative research preparation. If we consider the teaching of each course as a package of the cognitive spiral, then in each subsequent package all the significant ones from the previous package are reconstructed at a higher level and the principles are "taken" as a succession.

4 Discussion

A number of scholars say that the basis of pedagogical knowledge is the professional training of teachers. According to EI Isaev, a professional teacher must have a good knowledge of the methodology, be able to use the textbook purposefully in the development of students. In solving creative work creatively, it is necessary to train students' ability to organize technical thinking and to accept it consciously [5].

It means professional training of physics teachers- comprehensive training and education of them in the field of research culture of future professional activity. The results of the training of physics teachers are reflected in their readiness for the relevant professional activity. The concept of training consists of social, psychological and epistemological components. The latter components include: professional flexibility of the teacher, the education system that forms the basis of professional activity and ensures the ability to make professionally competent decisions, methods of carrying out activities consisting of the necessary set of skills.

It is known that the professional training of physics teachers in higher education consists of three main areas: general cultural, subject (physics) and psychological and pedagogical. From the third year of higher pedagogical education, professional preparation of students for secondary schools (during pedagogical practice) is carried out on a regular basis. This preparation is usually called methodical.

Thus, the methodological training of a teacher is a specially organized training aimed at mastering the theoretical foundations of real knowledge and the implementation of the process of teaching physics to students in secondary schools.

Methodical training of future physics teachers in pedagogical universities is carried out within a specially organized educational structure [6].

The elements of this structure are the goals of the organization of training, which must be achieved in the time allotted to students. In addition, it includes a system of academic courses (compulsory and elective), school workshops and internships, term papers and dissertations, the amount and duration of training specified in the curriculum. Each of them has its own content (specified in the program: topic, or requirements to be fulfilled), as well as forms of organization of implementation (lectures, workshops, seminars, laboratory classes). One of the elements of this structure is a system of control over students' learning content. It also has content (fragments and examination materials, control tasks) and organizational aspects of implementation.

In the process of professional training of future specialists in physics, the theoretical and methodological aspects of the physical sciences: philosophy, general and theoretical physics and methodological disciplines. Specially designed educational and methodological tasks and logical-structural schemes are systematically used for the latter, which include issues of philosophical and methodological nature.

According to E. F. Zeer [7], professional qualification is a characteristic of specialists, the main qualification is trained professionals. Basic professional competence determines

the mobilization of trained professionals and specialists in the social profession, and it is mastered in the process of acquiring knowledge after graduation.

5 Conclusion

Educational-methodical associations are engaged in the development of state requirements for the level of education and content of education of university graduates. They develop standard "Qualification Requirements" for the professional training of graduates. It provides a list and content of disciplines taught in a particular specialty and in accordance with the specialization, and indicates the time (standard curriculum, mandatory minimum of the educational program, content). However, observations show that such work is slow.

The research of scientists on the introduction of educational standards in higher pedagogical schools allows us to draw the following conclusions [8].

- The results of the introduction of state educational standards in pedagogical universities need to be constantly updated;
- Since the purpose of pedagogical education is not clearly stated in the educational standard, it is necessary to determine the level of preparation of graduates for professional activities;
- requires the development of methods of applying educational standards, taking into account the orientation of the individual in education;
- Implementation of the standard requires the development of a model of the training process.

It is necessary to define the connection between special and psychological and pedagogical disciplines in the curricula of higher education institutions. For this purpose, an analysis of the curricula of higher education institutions, which train many teachers. The results of the analysis showed, firstly, the improvement of psychological and pedagogical training of teachers, and secondly, the role of disciplines in teacher training.

Thus, the changes in the field of education in recent years require a reflection on the vast experience of professional education in physics, the science of pedagogy, and its effective use in practice. Thus, the research culture as a dialectical process of the movement from ignorance to knowledge is based on a system of continuous professional pedagogical knowledge, skills and abilities of future professionals.

Thus, the result of research culture is continuous professional pedagogical education. Continuing professional pedagogical education is characterized by a systematic comparison with the spontaneous, practical knowledge, which is a set of information, links, activities and subject instructions accumulated in the historical development of simple practice [9, 10].

Continuing professional pedagogical education is a condition for the success of a teacher in professional and personal development and self-realization. The system of continuing professional pedagogical education: pre-professional training - basic professional education - professional development - postgraduate professional education. then you can continue your studies at the next level of a similar department at another university.

The Kazakh multidisciplinary school is a single continuous system that covers all stages of continuous professional pedagogical education from kindergarten to university, and skillfully combines the language, mentality, culture, traditional labor education, spirituality of the Kazakh nation with the achievements of world civilization. consider as.

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