



THEORETICAL BASIS OF PREPARING FUTURE IT TECHNOLOGY TEACHERS FOR INNOVATIVE ACTIVITY

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Annotation

Technologies, system for attracting future technology teachers to innovative activities have been developed. The system includes the technology of organizing the innovative environment of the higher educational institution, the technology of forming personal and professional resources, the technology of consulting, each of which includes goals, approaches and principles, content, conditions, results and measures of results. Descriptions have been reviewed.

Basic phrases : Method, research, result of the lesson, educational activity, self-control, method of oral presentation, story, explanation, conversation, lecture, demonstration method, demonstration, explanation, excursion, practical method, exercise, laboratory, practical work.

Relevance of the Research Topic

The relevance of the research, on the one hand, is determined by the modern requirements of the state and society, which are reflected in the state documents that define the goals and requirements for the innovative activity of the future technology teacher. On the other hand, it is determined by the modern trends of development of innovative issues in scientific works related to pedagogy, social philosophy, psychology, economy and management. The need to direct pedagogical activity to new achievements of science, to attract future technology science teachers to innovative activities is determined by the main directions of modernization of higher education of the Republic of Uzbekistan. Regulatory documents in the field of education, science and innovation regulate experimental and innovative activities in the field of higher education.





At the same time, studies show that in the conditions of significant changes in the external environment, changes in the higher education of the Republic of Uzbekistan were rejected, including by teachers. In order to achieve the efficiency of innovation processes, a new approach to ensure the participation of future technology teachers in innovation, and to ensure the efficiency and management of these processes is necessary. To form such an approach, as an interdisciplinary category, it is necessary to study in depth the issues of managing the innovative activities of future technology teachers .

The need to increase the efficiency and management of the innovative activities of future teachers of technology, as well as to determine the theoretical and methodological bases of the involvement of future teachers of technology in innovative activities, the urgency of solving the problems of developing the innovative activities of future teachers of technology defines. [A.1].

The degree of development of the problem. Many theoretical and practical studies on the problem of innovation testify to the formation of the theory of innovation and various concepts within this theory. The interdisciplinarity of this field of knowledge serves as a basis for the formation of the theory of innovation in several fields.

of future technology teachers reveals a number of serious contradictions. Contrasts between:

- Improving the quality of professional training of students directly depends on the innovative activity of the future teachers of technology science , socially conditioned demands of the state and society on the innovative activity of pedagogues;
- Purposeful work on attracting future technology science teachers to innovative activities is not being carried out in higher education ;
- Society's need for an innovative active future teacher of technology and the barriers to innovative activity that arise among teachers;
- The need for scientific justification of the concept of involving technology science teachers in innovative activities and the insufficient development of this problem in pedagogical research;
- The need to eliminate obstacles in innovative activities and the lack of scientific and methodological support of technologies for attracting future technology teachers to innovative activities.

The desire to find ways to resolve these contradictions determined the problem of our research: What are the theoretical and methodological foundations of the involvement of future technology teachers in innovative activities.



The Purpose of the Research:

To justify, develop and experimentally test the technologies of involving future technology teachers in innovative activities.

Research Object

Management of innovative activities of future technology science teachers.

The research subject consists of the ideas, laws, principles, model, technologies and pedagogical conditions of the implementation of the technologies of involving the future technology science teachers in innovative activities.

Research Hypothesis

Involvement of future technology teachers in innovative activities will be an effective process if its design and practical implementation are based on the following .

- As a state and social order determining the involvement of future technology science teachers in innovative activities, as a component of the pedagogical management of innovations in higher education, the pedagogical expediency of involving future technology science teachers in innovative activities;
- In the conceptual and terminological field of pedagogy, the definition of the concept "Involvement of future technology teachers in innovative activities", description of its scope and limits; ecological, student- and resource-based approaches, which are the methodological basis for modeling the involvement of future technology teachers in innovative activities;
- A conceptual model of involving future technology science teachers in innovative activities in the two-level unit : a methodological framework and pedagogical system that provides a comprehensive understanding of the research subject and practical implementation of theoretical constructions;
- A complex of technologies to attract future technology teachers to innovative activities (personality-forming technology-professional resources, technology for organizing an innovative environment of higher education, consulting technology), identifying the process under consideration with the pedagogical conditions for their implementation provides. .[A.1 ;,2;, 3].

Research Objectives

To determine the pedagogical expediency of involving future technology teachers in innovative activities as a component of pedagogical management of innovations in higher education .





To reveal the meaning of the concept of "Involvement of future technology science teachers in innovative activities".

Development of the concept of involvement of future technology science teachers in systematic, synergistic, innovative activities.

and development of a conceptual model of the involvement of future technology science teachers in innovative activities.

Development of a system of technologies for attracting future technology teachers is an innovative activity of higher education.

future technology teachers in innovative activities.

Research Methods

A set of complementary theoretical and empirical research methods appropriate to its topic was used to solve the problems and test the initial assumptions:

- Theoretical: philosophical and methodological analysis;
- Psychological, economic, pedagogical studies, general scientific methods (analysis, synthesis, comparison, generalization, systematization, modeling), design;
- Experimental: questioning, monitoring, analysis of activity products, self-assessment, peer review, pedagogical experiment;
- Statistical methods of quantitative data analysis.

In the first stage (2020 - 2021), the theoretical concept of the research was formed. The result of this stage was to define the problem and purpose of the research, formulate its tasks, put forward the research hypothesis and determine the characteristics of the conceptual apparatus., the concept of involving future technology teachers in innovative activities was developed. The main approaches and principles of modeling involvement in innovative activities were determined. Empirical studies involving a step-methodological combination were identified, the main concepts were clarified in its process, and experimental methods were selected. In the third phase (2022 - 2023), the concept formation was completed, a formative experiment was conducted on the introduction of technologies to involve future technology teachers in innovative activities, the experimental data and results were analyzed and summarized research, in general , literary processing of the dissertation research was carried out.

Research Base

Experimental work was carried out on the basis of Termiz State University and Karshi State University. 256 teachers of higher education participated in the research. The main theoretical rules were tested



Termiz State University and Karshi State University in general, more than 1000 teachers of higher educational institutions, school teachers, graduate students were covered in the research.

Reliability and validity of research results are ensured by relying on methodological approaches of scientific and pedagogical research, modern scientific concepts; a combination of applying a complex of research methods, quantitative processing of the obtained data and their qualitative analysis, corresponding to its object, subject, hypothesis, goals and tasks, positive results of empirical and experimental work.

The scientific novelty of the research is as follows: the pedagogical expediency of involving future technology teachers in innovative activities as a component of pedagogical management of innovations in higher education is determined.

Within the framework of the process, the content and scope of the concept of "Involvement of future technology science teachers in innovative activities".

"Innovation management in higher education" as a set of personal and professional management processes, management of factors of higher education environment. resources, managing the elimination of obstacles to innovation, psychological and pedagogical support.

The concept is developed on the basis of a methodological set of approaches (systemic, synergistic, ecological, person-oriented and resource-oriented), which shows us the process of involvement in innovative activities, as a holistic activity for the formation of innovative activities of future technology teachers. allows to show.

Functional components of the involvement of future technology science teachers in innovative activities;

The synergetic approach establishes the laws of development of the personality of the future technology teacher as a self-developing, social system in the innovative environment of the higher educational institution;

The ecological approach reflects the connections between the opportunities of the innovative environment of the higher educational institution and the innovative potential of the teacher in the process of eliminating innovative obstacles ;

The person-oriented approach reflects the connections between the subject and the mechanisms of the subject's interaction in the process of overcoming barriers to innovative activity;

The resource approach establishes the connection between the management of the resources of the higher education institution and the development of the innovative potential of teachers.



The model of involvement of future technology teachers in innovative activities is based on the patterns of self-development of the individual, and pedagogical systems, principles based on these laws:

The principle of management, the principles of professional self-improvement, the principle of activation of innovative potential.

The methodological basis and the pedagogical system are the main components of the pedagogical system:

- 1) Strategic goal (professional self-development of future technology teachers)
 - 2) Ontological component (elimination of obstacles in the innovative activity of future technology teachers)
 - 3) Technological component (a set of technologies for engaging future technology teachers in innovative activities)
 - 4) Result component (manifestation of innovative activities of teachers in the innovative environment of the higher educational institution)
- future technology teachers in innovative activities were developed.

Criterion 1 "innovation orientation" - indicators: the presence of achievement motivation, level of readiness to participate in innovative activities, average assessment of value-information barriers for innovation;

Criterion 2 "innovative efficiency" - indicators: publication activity of the future technology teacher, self-assessment of the choice of innovative products, average structural-informational and science-educational barriers assessment;

Criterion 3 "self-realization in innovative activity" - indicators: place in the ranking of scientific and research activities, satisfaction with the innovative environment of the higher educational institution, average assessment of inconsistency barriers. .[A.1 ;3;, 4].

The theoretical significance of the research results is as follows:

- The essence and content of the concepts are clarified: obstacles to innovation, intervention and participation in innovation;
- The innovative activity of the future teacher of technology, the innovative potential of the future teacher of technology, the innovative environment of the higher educational institution, identified the systematic connections of these concepts that enriched the conceptual and categorical apparatus of the theory and methodology of vocational education without;
- From the point of view of pedagogical management of innovations in the higher educational institution, the interpretation of the involvement of future technology science teachers in innovative activities is given ;



- What helps to develop the theory and practice of management of the educational system;
- The typology and characteristics of the factors determining the innovative activity of the future teachers of technology are determined, which serves to develop the methodology of professional education in the conditions of preparing pedagogues for innovative activities in education;
- The concept of involving future technology science teachers in innovative activities was created, which helps to create conditions for illuminating the considered problem as an independent current direction of scientific pedagogical research;

- Technologies for involving future technology science teachers in innovative activities have been developed, which will enrich the methodology of the research direction. Pedagogical problems of management, expanding the scope of technologies for the formation of innovative activities of future technology teachers ;

the conditions for the introduction of technologies for involving future technology science teachers in innovative activities have been determined, which will enrich the methodology of the field of studying pedagogical problems of management.

The practical significance of the research is that its results allow developing both strategy and tactics for the development of innovative activities in the higher educational institution, ensuring its effectiveness. Developed technologies and diagnostic procedures for evaluating the effectiveness of involvement in innovative activities were introduced into the practice of higher education institutions, as well as to improve the qualifications of the head and scientific-pedagogical staff of the higher educational institution . The criterion-diagnostic basis for evaluating the effectiveness of involving future technology teachers in innovative activities will help to improve the quality of diagnostic tools and procedures.

System of continuing professional education, enrichment of the methodology of empirical pedagogical research. The complex of developed technologies allows the educational organization of higher education to adequately respond to changes in the external environment, to create conditions for self-development of future technology teachers.

The results of the research are used in the development of the content of pedagogical education, help to increase the methodological and theoretical level of teaching of pedagogical sciences, modernization of pedagogical innovation courses of higher education based on the inclusion of research material in the content.

The results of the study are the development and testing of new modules and rules for the implementation of the basic educational program of the bachelor's degree in the expanded group of "Education and pedagogy" specialties.



From the rules and conclusions of the research work, in the development of normative documents on the innovative activities of future technology science teachers, training programs, methodological instructions and manuals for future technology science teachers and organizers at all levels. was used to create [A.1 ;,4;,5].

Translation Results

The personal contribution of the researcher in obtaining scientific results is expressed in problem formulation, development of the research concept, development of a conceptual model of involvement of future teachers of technology science in innovative activities, technologies of involvement in innovative activities, direct participation.

In the framework of the introduction of technologies to attract future technology teachers to innovative activities, the electronic service "support services for the innovative activities of future technology teachers" was created and tested under the leadership of the author, the content of the service departments - determined the essence, ensures that the interaction between the participants of the innovative environment is developed on the basis of theoretical, practical, consultative and educational forms and included in the innovative activity.

Information on the approval and implementation of the results of the study:

The following rules are put forward for protection: Pedagogical expediency of involvement in innovation, the activities of future teachers of technology are determined by state support for innovation, which links the professional activity of teachers to new achievements in science, social changes and new technological developments. is to direct the needs of the professional community to the new quality of education in the conditions of the processes.

Involvement of future technology science teachers in innovative activities. It is a multifaceted, controlled goal-oriented process system that provides innovative activities of future technology teachers on the basis of mutually beneficial and voluntary cooperation between future technology teachers and the educational environment. , management of innovations in a higher educational institution, management of environmental factors of a higher educational institution, personal and professional resources, elimination of obstacles, providing innovative activities and psychological-pedagogical support.



Involvement of future technology teachers in innovative activities as a component of pedagogical management of innovations in a higher educational institution is a system of purposeful processes that reflect connections between structural structures.

Innovative activities of future technology teachers;

In the innovative environment of the higher educational institution, the future teacher of technology takes into account the laws of development of the personality as a social system;

the possibilities of the innovative environment of the higher educational institution and the innovative potential in the process of eliminating obstacles to innovation, the future teacher of technological science of the higher educational institution;

Reflects the connections between the subject and the mechanisms of interaction between the subject and the subject in the process of eliminating obstacles in innovative activity;

Considers the relationship between higher education resource management and the development of innovative potential of future technology teachers .

The model of involvement of future technology science teachers in innovative activities systematizes the laws, approaches and principles of participation;

The system of technologies of involvement in innovative activities determines the sequence of creating pedagogical conditions for the implementation of technologies in order to achieve the desired result.

The criteria and indicators of involvement in innovative activities correspond to the content of technologies of involvement in innovative activities and provide an adequate mechanism for measuring the results of involvement in innovative activities of future technology teachers.

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