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**MULTICOMPONENT STRUCTURAL AND LOGICAL MODEL  
OF INNOVATIVE MANAGEMENT IN HIGHER EDUCATION  
AND THE MECHANISMS FOR ITS IMPLEMENTATION**

**МНОГОКОМПОНЕНТНАЯ СТРУКТУРНО-ЛОГИЧЕСКАЯ МОДЕЛЬ  
ИННОВАЦИОННОГО УПРАВЛЕНИЯ В ВЫСШЕМ ОБРАЗОВАНИИ  
И МЕХАНИЗМЫ ЕГО РЕАЛИЗАЦИИ**

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*Improving the mechanisms for the formation of innovative management in the system of higher pedagogical education. To achieve the goal and the implementation of the tasks, a set of the following theoretical and empirical methods was used: analysis of scientific literature; expert review; questioning; analysis of documents; statistical methods for processing empirical information. The multicomponent structural and logical model has been improved, aimed at the development of managerial activities of leading personnel of higher educational institutions on the basis of a mechanism for giving priority to the requirements for the quality of training in the field of education.*

*Рассмотрено совершенствование механизмов формирования инновационного менеджмента в системе высшего педагогического образования. Для достижения цели и выполнения поставленных задач использовался комплекс следующих теоретических и эмпирических методов: анализ научной литературы; экспертная оценка; опрос; анализ документов; статистические методы обработки эмпирической информации. Доработана многокомпонентная структурно-логическая модель, направленная на развитие управленческой деятельности руководящих кадров высших учебных заведений на основе механизма приоритета требований к качеству подготовки в сфере образования.*

**Keywords: innovation management, education manager, innovation.**

**Ключевые слова: управление инновациями, менеджер образования, инновации.**

Dynamic changes in modern society, increasing the role of the individual as the main social value, determine the structure of teacher training aimed at the implementation of all stages of lifelong education, taking into account the professional needs of the individual.

In the process of improving the higher education system, functioning internal innovation processes are a factor that determines the development technique of the education system itself, as well as its subjects as a whole.

Improving the system of higher education in order to achieve its qualitative conformity with the prospects for the development of the country and the entire system of lifelong education of the Republic of Uzbekistan requires both scientific and methodological and organizational and methodological support of innovative transformations in the educational process. In this regard, along with substantive changes, organizational and structural improvements in the system of training pedagogical personnel are also necessary, as well as a targeted search for updated techniques at all stages of this work.

Innovations reflecting the development of each higher educational institution are carried out either through experiments, or by adapting and transferring relevant experience. Based on this, today it is very important to generalize innovative technologies, ensure the accessibility of information received to all higher educational institutions on the progress and results of ongoing research, and determine ways to implement the continuity between traditions and

innovations. Therefore, it can be argued that during the period of innovative development of a higher educational institution, a new function of governing bodies appears - organizational and methodological support for the success of the introduction and dissemination of various types of innovations.

In addition, the results of the analysis of the formation and development of managerial skills indicate that the ability to effectively and efficiently implement the relevant innovations by education managers is one of the requirements for the preparedness of an effective reserve of managerial personnel of higher and secondary special, professional educational institutions.

In connection with the foregoing, an effective model of innovative management in the higher education system was developed. This model corresponds to modern ideas about it as a system and hierarchy of interconnected and interdependent components that adequately reflect the studied innovative management.

In the context of the raised problem, this approach involves the selection of the following structural components in the model:

- target;
- informative;
- active;
- informational;
- final.

The above components of the model are implemented through innovative management technologies and various forms and types of management actions, during which the expect-

ted result of innovative management is achieved.

The target component (using the technology of managerial modeling, analysis of experience, resource problems of a higher educational institution and the development of educational work) is the first and main. As mentioned above, this component has a close relationship with other structural components of the model. At the same time, it determines the structure, as well as the content, determines the main and particular goals of the expected results, reflecting, first of all, the quality training of a qualified, competitive specialist who is able to optimally adapt to new conditions (Fig. 1 – structural-logical diagram of the model of innovative management of higher education system).

As part of the target component, the following main tasks are identified:

- Creation and development of an optimal innovative environment in the higher education system;
- management optimization in accordance with modern features of the development of higher education;
- development of innovative development strategies taking into account the existing specifics of the higher education system.

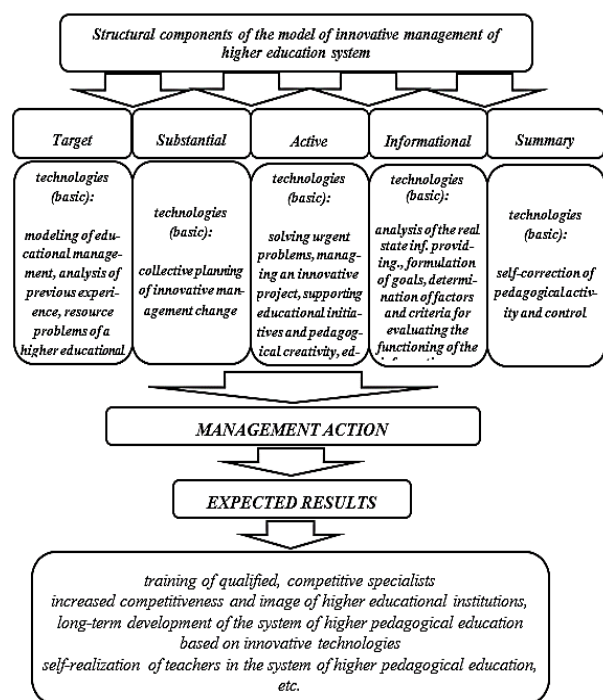


Fig. 1

The creation and implementation of the model of innovative management of the higher education system provides for the following important principles:

- the principle of scientific innovation development (provides for fundamental, theoretically substantiated provisions on innovative development);
- The principle of innovativeness of the management process (characterized by the focus on the constant updating of the management process as a result of the application of innovative technologies, structurally functional improvement, encouraging initiative and innovation);
- the principle of prestige in a competitive environment (provides for a continuous increase in the effectiveness of the educational process aimed at training highly qualified personnel, the systematic participation of the team in the innovation process);
- The principle of motivation of innovative activity (characterized by systematic stimulation of a complex long-term innovation process, providing conditions for experimental activities of teachers, support for innovative teachers, stimulation of innovative initiatives);
- The principle of individual and collective responsibility for the implementation of innovative technologies (combined with the principles in educational management, provides for the personal functional responsibility of the participants in the educational process for their share in innovative activities, delegation of authority for the implementation of innovative activities).

At the same time, the introduction of the model of innovative management of the higher education system involves the use of the following managerial innovative technologies:

- technologies for solving urgent problems;
- technologies for managing an innovative project;
- technologies of collective planning;
- technologies for the long-term development of a basic innovative idea;
- technology support for educational initiatives and pedagogical creativity;
- management modeling technologies;
- technologies for self-correction of pedagogical activity;

- technology educational games;
- technologies for the development of educational work;
- technologies of organized innovative change of management states;
- technology analysis of experience, resource problems of a higher educational institution.

In order to determine the effectiveness of the prepared model of innovative management of the higher education system, an empirical study was conducted, in which 437 respondents participated, from among students, teachers, and education managers, both male and female, who carry out their activities in the higher education system.

To create conditions for adequate comparability of the obtained results, two groups were formed:

- an experimental group of 232 respondents;
- a control group of 205 respondents.

Needless empirical research was conducted within one year, during which the entire sample (n = 437, experimental and control groups) was evaluated according to the worked out evaluation criteria of innovative management higher education system through a repeated anonymous survey on specially designed questionnaires, as well as analysis of relevant documents, observation and selective conversations before the start of an empirical study, during its conduct and at the end of ongoing work.

The development of empirical research questionnaires was based on the criteria for evaluating innovation management, taking into account the use of the twelve point scale of the semantic differential. The analysis of the documents was carried out by familiarizing ourselves with the official documentation and evaluating the innovation management according to the criteria developed according to a pre-prepared registration form providing for twelve point scales. Evaluation of the results of observation of the educational process, selective conversations was also based on indicators of the innovation management criterion according to the developed observation form and selective conversations providing for twelve point scales. All this made it possible to digitally summarize the results, which signifi-

cantly facilitated the analysis process, taking into account the application of statistical criteria.

In addition, the above approach to the organization and conduct of this empirical study made it possible not only to determine the final result of the effectiveness of the prepared model, but also to monitor the dynamics of the changes as a result of ongoing work on the optimization and development of innovative management.

The results of the survey before the start of the empirical study showed that the main composition of the respondents, both the experimental (97.4%, 226 people) and the control groups (97.5%, 200 people) had a basic level of innovation management development (Fig. 2 – the results of a survey to assess the level of development before the implementation of the innovation management model (n = 437)).

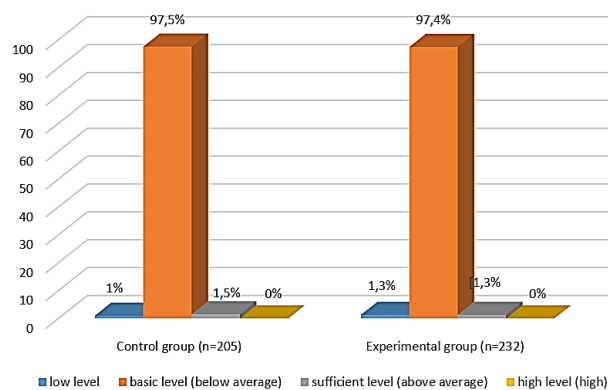


Fig. 2

In these groups, there was a relatively sufficient staffing of teaching staff, which made it possible to organize the educational process that partially corresponded to the requirements.

Certain conditions were created for the organization of innovation. At the same time, the planning and support of innovations was carried out at an insufficient level. In this regard, there were significant difficulties in the practical application of innovative technologies.

The above are confirmed by the results of the analysis of official documents, observations and selective conversations conducted before the introduction of the innovation management model. Thus, the effectiveness of innovative management in the control (average

score - 5 points) and experimental (average score - 5 points) groups before the introduction of the innovation management model was almost identical and was evaluated at a lower average level, which corresponds to the so-called basic level of development.

A survey of respondents after six months of targeted application of the innovation management model showed that in the control group, the indicator of innovation management effectiveness remained almost unchanged (baseline - 98.5 %, 202 people), in contrast to the experimental group, where this indicator grew to a sufficient level (above the average level - 84.9 %, 197 people) (Fig. 3 – according to estimates the survey results is, the level of six months after the introduction of innovative management model (n = 437)).

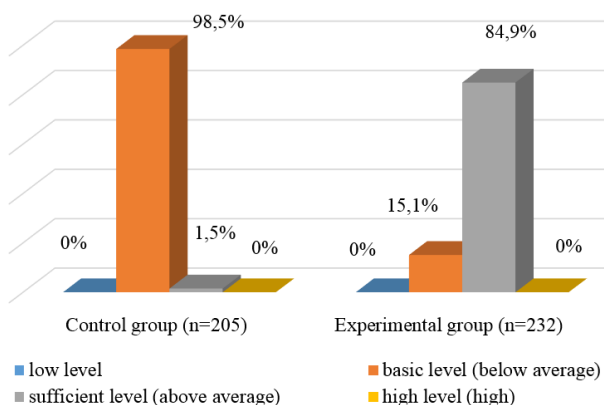


Fig. 3

Organization of the proper conditions for innovation, planning and support of innovations has acquired a systemic nature, in this regard; the practical use of innovative technologies has become relatively stable.

Like the previous assessments, the above conclusions are confirmed by the results of the analysis of official documents, observations and selective conversations conducted after six months of application of the innovation management model. Thus, the effectiveness of innovative management in the control group remained virtually unchanged (average score - 5 points), and in the experimental group, as a result of the work carried out, it rose to above the average level (average score - 7 points), which corresponds to the so-called sufficient level of development.

The results of the survey after one year of the introduction of the innovation management model in the educational process showed that in the control group the level of innovation management effectiveness did not undergo significant changes and remained mainly at the basic level (below the average level - 98.5 %, 202 people). At the same time, this indicator in the experimental group strengthened at a sufficient level (above average - 81.9 %, 190 people), and also partially increased to a high level (high level - 18.1 %, 42 people), creating a solid foundation for further dynamic development (Fig. 4 – the results of a survey to assess the level of development after one year after the introduction of the innovation management model (n = 437)).

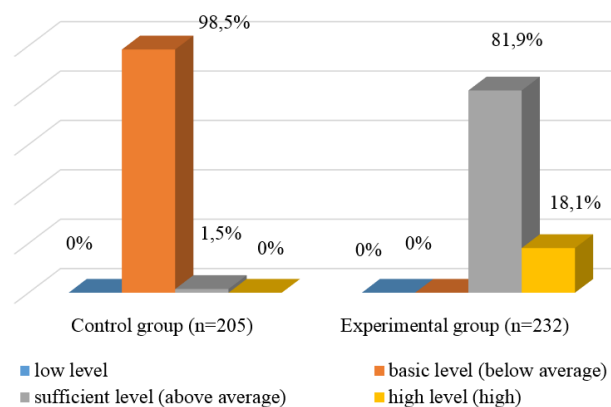


Fig. 4

In the experimental group, as a result of the work, the content and organization of the educational process almost completely began to meet the requirements of the modern labor market, taking into account the active use of innovative technologies, the quality of learning material for students increased significantly. Work with successful students has acquired an established character, which in turn has allowed to achieve the desired result. In addition, participants in the educational process of the experimental group, as a rule, achieved a more sustainable need and ability to innovate. The created proper conditions for the organization of innovative activity made it possible to carry out more efficient planning and support of innovations, in this regard, the practical application of innovative technologies has gained sus-

tainable stability, innovative activity and development prospects have been traced.

At the same time, the importance of the achieved indicators is also explained by the role of internal and external motives for the activity of the object of the educational process, which produces a certain influence on the behavior of students, teachers, direct their activities in the direction necessary for the educational process, regulate the intensity of pedagogical activity and its results, encourage to show good faith, perseverance, diligence.

All the above conclusions are confirmed by the results of the analysis of educational and normative documents, observations and selective conversations conducted after one year after the introduction of the innovation management model. In turn, the effectiveness of innovative management in the control group remained stable unchanged (5 points), and in the experimental group, as a result of work carried out for one year, it rose to above the average level (9 points), which corresponds to the so-called sufficient level of development and is very promising for achieving a sustainable high level of development (10-12 points).

The above highlighted dynamics of the educational process, as a result of the practical application of the innovation management model, clearly demonstrates significant positive changes in the experimental group and the almost low level of control development, which remained unchanged for one year (Fig. 5 – the dynamics of the development of innovation management effectiveness in comparison groups (n = 437)).

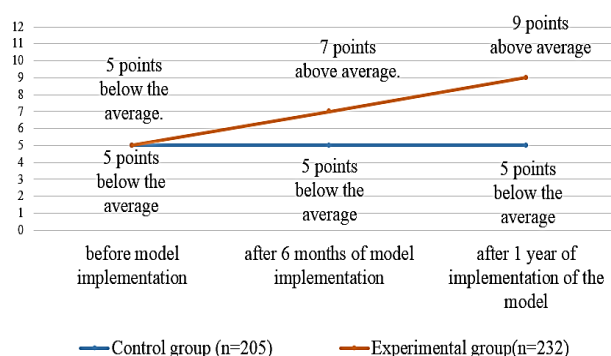


Fig. 5

In addition, the revealed significant changes in the dynamics of the development of

the experimental group and the persistently low level of development of the control group are also confirmed statistically. Thus, the conducted correlation analysis shows that there was no significant correlation between the signs “names of comparison groups” and “the effectiveness of innovative management before the introduction of the model” ( $r = 0.039$  at  $p < 0.050$ ). At the same time, after the introduction of the prepared model, as a result of the practical application of innovative technologies, between the signs “names of comparison groups” and “the effectiveness of innovative management after six months of implementation of the model” a significant positive correlation appeared ( $r = 0.86$  at  $p < 0.050$ ) and increased after one year of operation of the prepared model ( $r = 0.87$  at  $p < 0.050$ ).

In order to ensure the quality of educational processes through practical implementation of the model of innovative contact management prepared appropriate guidelines, which are designed and can be used, above all, managers of education and teaching staff engaged in seeking and innovation processes in higher education.

Innovation management begins with the creation and implementation of a system of self-education that provides theoretical and practical training for the implementation of innovative processes [5]. The theoretical basis of the education manager engaged in innovative management activities should include:

- theoretical developments on the basics of innovation management;
- Theories of educational management and innovative educational management;
- the basics of pedagogical innovation;
- regularities of the flow of innovative processes formulated by researchers at different stages of their development (the law of irreversible destabilization of the pedagogical environment, the law of the mandatory implementation of the educational process, the law of stereotyping of pedagogical innovations and the laws characterizing the management of innovative processes in the educational process;
- the feasibility of innovative management (focus on the specifics of the educational process, the needs and capabilities of their participants);



- strategic (focus on development and its compliance with the requirements of the future, the needs of the labor market, the development of education, the economy, the state);

- components of innovative management, which are philosophical, motivational, creative, reflective, technological components.

A mandatory requirement is that for the implementation of innovative processes, the education manager must form a management team and choose the appropriate management style. By management style we understand the forms and methods of management that are implemented in relations with participants in the educational process. The concept of "management style" in its content defines the means of influence of the manager on individuals or groups of people, directing their activities to achieve the goal of the educational process.

In this case, one should take into account the position of scientists who distinguish two categories of management styles:

- task-oriented management;
- HR management.

Personnel-oriented management reproduces a personality-oriented approach to management and creates favorable conditions for creative work and uses methods such as delegation of authority, motivation and communication to regulate interpersonal relations in a team [6], [9], [10]. Naturally, when introducing innovations into managerial practice, a combination of both categories of management is necessary, due to which certain goals of innovation are achieved by combining strict adherence to the planning, organization, control and implementation of a personality-oriented approach and functions defined as specific for the implementation of innovation management.

The result of the introduction of managerial innovative technologies by managers is:

- the solution of those pedagogical problems that have so far been resolved differently;
- finding original non-standard solutions to various pedagogical problems;
- relevant, significant and systemic neoplasms arising from the implementation of initiatives and innovations that become promising in the educational process [7].

Based on the study of theoretical sources, scientific and practical materials, preparation of a model of innovative management and analysis of its effectiveness, the general rules for effective innovative management of the higher education system have been developed [2], [3]:

1. Integration of all innovative tasks into a single innovative concept in the form of a fundamental basis for the growth of competitiveness. It means that:

- the entire teaching staff is aware and understands the accepted innovative concept of development and supports it;

- all units effectively interact and develop in a coordinated manner within the framework of a certain concept;

- Innovative processes, primarily focused on the training of highly qualified specialists in the modern labor market.

2. Creating and stimulating a productive innovation climate.

3. Development and implementation of innovative projects.

4. Preparation and promotion of innovative developments in the market of educational services.

5. Ensuring the effectiveness and efficiency of innovation processes.

For the effective application of innovative technologies in the management of innovative projects in higher education, we consider it advisable for the education manager, as the subject of design, to adhere to the following recommendations:

- have basic knowledge of the theoretical foundations of planning, design technologies;

- have a clear idea of their place and role in the design;

- have a targeted focus on their project activities;

- act within their competence;

- carry out general project management;

- actively interact with senior management bodies, consultants, experts;

- comprehensively analyze the situation, the logic of its development;

- form a team of designers;

- determine the degree of importance of the decision in time (urgent, strategic) to be able to

work in a team, coordinate the activities of team members;

- provide the project team with information, qualified instructions, tasks;
- monitor design work;
- evaluate the results of design work.

In order to effectively organize the training of education managers, based on the study of scientific literature and practical materials, we have prepared relevant recommendations. So, at the level of functioning of scientific and methodological units, it is necessary:

- introduce a system of measures to motivate innovative activities of education managers (promotion of promising experience, creative portraits of innovative managers, information on the progress of innovation in the education system, international experience in this direction, etc.);

- organize informational support of innovative activities of education managers (creation of a bank of pedagogical ideas, educational innovations, best practices, etc.);

- implement a system of events (workshops, conferences, trainings, scientific and methodological recommendations, etc.) to develop the skills of pedagogical reflection of one's own experience, highlighting the main pedagogical ideas, creative novelty, effectiveness, and features of managerial innovative technologies);

- develop diagnostic and prognostic activities to identify creatively working education managers who want and are predisposed to innovative activities;

- send education managers to further training for the development of methodological knowledge, managerial skills;

- to promote and encourage the implementation of an introspection of readiness for innovative activities, self-esteem and self-correction (identifying the characteristics of their own management technology, innovative potential);

- conduct training on issues of innovative management, theory and management methodology;

- provide organizational and coordinating activities through the creation of differentiated creative groups for education managers seek-

ing to manage the institution on the basis of innovative technologies;

- provide advice on the methodology for identifying problems, formulating a managerial task and choosing innovative technologies;

- organize assistance to education managers in developing a program for the implementation of managerial innovative technologies;

- ensure the creation of a favorable psychological climate for the activities of innovative managers, as well as the stimulation of innovative search (scientific and methodological support, presentation of experience, coverage of intermediate results in methodological publications);

- create conditions for consolidating the results of the innovative activities of education managers (ensuring links between creative groups of education managers and scientists, coordination of innovative and experimental work);

- include expert examination of materials on which the manager-innovator, various teams carry out innovative management activities, as well as studying the practical results of innovative management and examination of innovations that arise as a result of the activities of innovative managers [1], [4], [8].

## REFERENCES

1. *Baltyan V.* Training - a condition for the innovative development of the national technological base // Higher Education in Russia. – № 12, 2007. P.19...24.
2. *Ismadiyarov Y.* The specifics of the professional activity of the manager-innovator in education // International Journal of Academic Research and Reflection. – 7 (6), 2019. P. 20...23.
3. *Ismadiyarov Y.* Theoretical preconditions of innovative management in higher education // International Journal of Academic Research and Reflection. – 7 (6), 2019. P.56...64.
4. *Lozova V.I.* Formation of pedagogical competence of teachers of higher educational institutions // Pedagogical training of teachers of higher educational institutions: Mater. scientific and practical. conf. – Kharkov, 2002. P. 3...8.
5. *Nabiulina L.* (2019). Innovative technologies in education and using them for information technology teaching // International Journal of Academic Research and Reflection. – 7 (6), 2019. P.24...29.
6. *Rosenzweig A.* On innovations in the education system // Higher Education in Russia. – № 8, 2008. P.88...92.



7. *Solodukhin K.S.* An innovative approach to choosing a strategy for interaction between a university and its stakeholders // *Economic Sciences.* – № 1, 2009. P. 140...145.

8. *Stepanov S.Yu., Varlamova E.P.* Reflexive-innovative approach in training management personnel // *Issues. psychology.* – № 1, 2005. P. 60...68.

9. *Trifonova S.* Innovative educational route // *Higher education in Russia.* – №4, 2008. P. 155...158.

10. *Shakirov R.R.* Problems of formation and development of managerial culture of managers in the field of education // *Higher education today.* – №2, 2009. P.16...18.

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