

## STATE OF PREPARATION OF FUTURE TEACHERS FOR INNOVATION ACTIVITIES

R.Kh.Djurayev

Academician of the Academy of Sciences of Uzbekistan, Doctor of Pedagogical Sciences, head of department. "Education Management" UzNIIPN

<https://doi.org/10.5281/zenodo.8393430>

**Abstract.** *The article analyzes the state of the current practice of university training of teachers for innovative activities in the field of education: how the system of professional training of future teachers for innovative activities functions in modern conditions, what is its effectiveness, strengths and weaknesses, the main directions for modernizing existing practice.*

**Keywords:** *training of future teachers, innovative activity, education sector, professional education, expert questionnaire, value and semantic guidelines for preparing for innovative activity, organizational and pedagogical conditions for preparing for innovative activity.*

The study of the current practice of university training of future teachers for innovative activities in the field of education pursued the following goals:

- 1) get a general idea of how the system of professional training of future teachers for innovative activities functions in modern conditions, what is its effectiveness;
- 2) identify the weakest and strongest aspects of such training;
- 3) determine the main directions for modernizing existing practice.

It was formed on the basis of a model of the object of analysis and provided for structuring the problem of preparing students for innovative activities in the field of education from certain angles. The questionnaire questions, in terms of their composition and content, were developed in such a way that the answers to them provided the necessary ideas about the theoretical and practical aspects of the training under consideration and made it possible to evaluate the effectiveness of the existing system element by element and as a whole. As the main elements of the pedagogical system, the value-semantic guidelines of preparation for innovation activity, the content of the process of preparation for innovation activity, the structure of the process of preparation for innovation activity, the organizational and pedagogical conditions of preparation for innovation activity were analyzed.

The methodological guidelines for the work carried out were determined by the following axiom:

- 1) readiness for innovative activity in all its structural components is essential not only for the teacher to perform his professional functions, but at the same time for his professional self-development and creative self-realization in the field of education;
- 2) preparation for innovative activity is adaptive to various levels and to all levels of professional education, i.e., it can be effectively implemented in different periods of training and on the material of disciplines of different cycles;
- 3) preparation for innovative activity depends on the specific conditions of the educational process and can be carried out at a qualitative level in different versions;
- 4) the preparation of future teachers for innovative activities should be analyzed and assessed in accordance with the dependencies characteristic of the pedagogical system.

Experts took part in the analysis and assessment of the state of university practice in preparing future teachers for innovative activities.

The experts' tasks included interpreting the data obtained, identifying the main problems, revealing the causes of their occurrence and the consequences they cause. The second group of experts worked with the results of a questionnaire survey of experts from the first group. The work in the group was organized according to the following scheme: presentation by the leader explaining the main objectives of the examination; presentation of questionnaire data; discussion on each element of the system for preparing future teachers for innovative activities; summing up the discussion. The main requirement that the experts adhered to was the discussion of a particular issue, ending after the conclusions and judgments expressed were approved by more than 70% of the discussion participants.

From 12 to 22 researchers took part in discussions of various aspects of the problem of preparing future teachers for innovative activities. The total number of participants in these discussions was 118 people.

Assessing the productivity of value-semantic guidelines in preparation for innovation activity The productivity of goal setting in the specified area of vocational training was analyzed and assessed according to the following criteria:

1) completeness (systematicity) of value-semantic guidelines for preparing future teachers for innovative activities;

2) consistency of value and semantic guidelines at different levels and in different levels of professional education;

3) compliance of the result of preparation for innovative activity with its main target orientations.

Value and semantic guidelines interested us in two respects: as the most important characteristic of the design of a pedagogical system and as a key element of its organization and management. In our analysis, we proceeded from the following sufficiently obvious fact: the creation and functioning of a unified system of professional training for innovative activities presupposes special goal setting on the scale of the entire educational process and coordination of the particular goals of disciplines of different cycles.

The first thing that attracts attention is that absolutely all of the teachers surveyed (experts of the first group) recognize the relevance of preparing modern teachers for innovative activities in the field of education. At the same time, if we consider preparation for innovative activity from the position of "social need and expected result," then significant discrepancies are found between the social order and its practical implementation. Most of the experts spoke categorically: 72% "partially meets modern requirements", 10% "completely does not meet modern requirements." None of the experts gave the rating "fully complies with modern requirements."

Indicative in this regard are the answers to the question "What proportion of pedagogical graduates leave the university prepared for innovative activities at the proper level?" No one supported the "all or almost all" position. Only 4% of experts believe that most graduates are adequately prepared for innovative activities; 44% noted that a smaller part and 52% of the unit were prepared.

The results of the survey show that graduates experience significant difficulties in virtually the entire range of practical tasks of innovative activity. The greatest difficulties arise when analyzing the state of teaching activities in an educational institution and identifying what needs

to be improved (a minority of 32% of graduates have been trained, only a few 58%); evaluation of proposals for introducing innovations into the work of an educational institution (37 and 47%, respectively); setting goals for the development of an educational institution (36 and 56%, respectively); planning the development of an educational institution (28 and 72%, respectively); assessment of the development program of an educational institution (36 and 54%, respectively); planning experimental work of teachers (66 and 18%, respectively); assessing the results of the implementation of development programs of an educational institution (65 and 16%, respectively); control and regulation of the introduction of innovations into the activities of an educational institution (49 and 17%, respectively).

For this group of tasks, the answers with the options “a minority of graduates are prepared at the proper level” and “a few are prepared at the proper level” predominate. Response rates for the “smaller part” option range from 28 to 66%. Response rates for the “units” option range from 16 to 72%. For individual tasks, the assessment of “minor part” and “one” in total reaches 66-100%, which actually indicates a complete lack of relevant professional knowledge and skills in the vast majority of graduates.

When organizing and practically implementing the preparation of students for innovative activities, the goals of professional self-education are actually blurred. Experts emphasize this circumstance when answering the question: “To what extent do future teachers prepare for professional self-development in a university environment?” The total indicator of negative assessments was 81% (67% - “students receive only general ideas”, 14% - “students do not receive the necessary knowledge and skills”) against 19% of positive assessments (“students receive the necessary knowledge and skills are not fully developed”).

As we can see, experts assess the preparation of students for innovative activities in general as not effective enough and not meeting modern requirements. During the discussions, it was concluded that the teacher’s readiness for innovative activities has not yet become an independent object of systemic goal setting. This conclusion seems quite fundamental. It is clearly illustrated by the results of a survey about the state of students’ teaching practice. Among the main disadvantages of practice, most experts note goal-setting and regulatory aspects: “in the programs of teaching practice, as a rule, there are no clearly defined tasks for the participation of students in the innovative activities of an educational institution” (73%), “regulations of pedagogical practice “It does not contribute to students’ acquisition of experience in innovative activities in the field of education” (56%).

The current situation is partly explained by the fact that goal setting in this area of vocational training is not at all normatively fixed. Of course, this has a negative impact on the design and practical implementation of the entire system of preparation for innovative activity.

Preparing a teacher for innovative activities necessarily involves the formation of motivation for creative work, interest in the results of one’s work, and the need for constant self-development. However, experts assessed this important aspect of professional training quite critically. Assessing on a 5-point scale the extent to which the professional training of future teachers creates positive motivation for innovative activities, 46% of experts gave 3 points, 24% 2 points, 14% - 1 point.

Results similar in value were obtained when assessing the process of formation in future teachers of the need for creative self-realization (58% -3 points; 18% 2 points), as well as when

assessing the process of forming their need for professional self-development (56% 3 points; 25% 2 points).

In this regard, other answers are also very indicative. Thus, 58% of experts, noting the main shortcomings of using the opportunities of teaching practice in order to prepare future teachers for innovative activities, point to the weak motivation of trainees to solve problems of improving the educational process.

Experts of the second group, in their comments on the results of the questionnaire, indicate that goal setting in the area under discussion is carried out in the conditions of higher pedagogical education in fragments, only for individual tasks of innovative activity and individual groups of knowledge and skills. This is mainly due to the lack of a common understanding of the goals of preparing future teachers for innovative activities. According to the discussion participants, a serious obstacle to planning full-scale training in this area is the lack of development of regulatory requirements.

The information obtained during the expert survey and subsequent expert discussion allows us to conclude that goal setting in this area of professional training on the scale of the entire educational process and special work to coordinate goals at all levels and at all links are not carried out.

Assessing the productivity of the content of the process of preparation for innovative activity. The productivity of educational content was analyzed and assessed according to three criteria:

- 1) the integrity of the content of the preparation for innovation activities;
- 2) the real contribution of its individual components to the overall process of shaping the readiness of future teachers for innovative activities;
- 3) implementation of an interdisciplinary resource.

The first question of this part of the questionnaire asked for an assessment of the content of the training in question as a whole. Only 8% of respondents believe that “the content requires local changes.” 92% of the answers were distributed in the range of negative values: 76% “the content requires significant changes”; 16% “such content must be created from scratch.”

To specify the overall assessment, the question was posed: “To what extent does the content of the programs implemented in the teaching staff training system ensure that future teachers develop the competencies necessary to solve the problems listed in the table?” The experts gave their assessment for each individual task of innovation activity, taking into account the proposed gradation.

As follows from the responses received, educational programs do not provide at the proper level the development of competencies in future teachers related to solving key problems of innovative activity. First of all, this relates to the tasks “Analysis of the state of teaching activities in an educational institution and identifying what needs to be improved” (86% of respondents believe that they “partially provide”, “weakly provide or do not provide at all” ); “Evaluation of proposals for introducing innovations into the work of an educational institution” (73% “partially provide”, “weakly provide or do not provide at all”); “Setting development goals” (86% “partially provide”, “weakly provide or do not provide at all”); “Planning the development of an educational institution” (100% “partially provide”, “weakly provide or do not provide at all”); “Assessment of the development program of an educational institution” (89% “partially provide”, “weakly provide or do not provide at all”); “Planning experimental work for teachers” (68% “partially provide”,

“weakly provide or do not provide at all”); “Assessment of the results of implementation of educational institution development programs” (73% “partially provide”, “weakly provide or do not provide at all”); “Control and regulation of the introduction of innovations into the activities of an educational institution” (54% “partially provide”, “weakly provide or do not provide at all”). The assessments received, of course, reflect the main idea: the “activity component” of the content of preparation for innovative activity should be strengthened. To do this, it is necessary to connect as firmly as possible with practice the innovative development of educational institutions, the real participation of students in improving the process, content, forms, means and technologies of education.

At the same time, professional competencies must be considered and assessed not only in relation to individual tasks, but also in relation to the entire innovative activity of the teacher as a whole. The assessments received, of course, reflect the main idea: the “activity component” of the content of preparation for innovative activity should be strengthened. To do this, it is necessary to connect as firmly as possible with practice the innovative development of educational institutions, the real participation of students in improving the process, content, forms, means and technologies of education.

At the same time, professional competencies must be considered and assessed not only in relation to individual tasks, but also in relation to the entire innovative activity of the teacher as a whole. In this case, the tasks of innovative activity take on the form of a logical relationship between professional competencies, which allows us to talk about the extent to which they influence each other, how and to what extent they determine the quality of pedagogical work, results design developments.

Competencies in this group of practical tasks actually form the core of a teacher’s professional readiness for innovative activities. A low assessment of the maturity of the noted competencies (from 21 to 61%, according to the indicator “partially provide” and from 12 to 79% according to the indicator “weakly provide or do not provide at all”) indicates that university graduates do not possess the necessary groups of knowledge and skills , primarily in system orientation in the field of education, pedagogical forecasting and making design decisions, designing innovative pedagogical processes for given goals, designing interdisciplinary didactic structures.

It is noteworthy in this regard that experts rated significantly higher the contribution of educational programs to the formation of future teachers’ competencies related to another group of tasks: “Analysis and evaluation of educational results” (“provide completely”, “provide mainly” 63%); “Search for pedagogical innovations, the implementation of which could be useful for improving the performance of an educational institution” (“provide completely”, “provide mainly” - 80%); “Evaluation of the results of introducing individual innovations into the work of an educational institution” (“provide completely”, “provide mainly” - 56%); “Assessment of the results of experimental work of teachers” (“provide completely”, “provide mainly” - 58%).

This group of tasks has a characteristic feature. Their implementation, to a greater extent than the first group, is based on general and pedagogical erudition, fairly common invariants of analysis, comparison, generalization, transfer, etc. In some cases, their implementation allows obtaining a positive result on an intuitive level , due to “unconscious experience” (A.M. Matyushkin). Obviously, the results obtained for this group of problems of innovation activity to a certain extent reflect the noted feature. Although, it is obvious that the content of educational

programs does not provide the formation of professional competencies at the proper level for this group of practical tasks and also require serious revision.

It is no coincidence that among the five main reasons for the existing shortcomings in the system of preparing future teachers for innovative activities, experts put the following in second place (72%): “the content of educational programs does not ensure the formation of the necessary competencies.”

Let us turn to the opinion of experts on the contribution of disciplines of general humanitarian, general professional and special cycles to the process of shaping future teachers’ readiness for innovative activities.

The majority of experts (78%) positively assess the potential of disciplines in the general humanities cycle. Of these, 12% believe that they are “quite high”, 66% that they are “significant”. And only 22% of respondents are of the opinion that they are “not significant.” When assessing the real capabilities of general professional disciplines, the ratings were also distributed in favor of a positive assessment: “quite high” 15%, “significant” - 68%, “not significant” - 17%.

According to experts, special disciplines have the greatest potential for developing innovative competence in students. 85% of respondents think so. At the same time, the estimates shift: “quite high” - 31%, “significant” 54%, “not significant” 15%. As we see, when moving from the content of general humanities disciplines to the content of special disciplines, the assessment of their real capabilities increases noticeably. This is understandable. Special disciplines are directly related to the professional functions of a teacher and have more meaningful projections on practical tasks of activity.

At the same time, the results of the survey reveal a certain paradox: despite the significant and even high potential of the disciplines of the general humanities, general professional and special cycles in preparing for innovation, for some reason they turn out to be ineffective in the formation of the necessary professional competencies. The main reason for this discrepancy, according to the experts of the second group, lies in the same goals. The content of the disciplines (to a greater extent of the general humanities cycle, to a lesser extent of the special cycle) is not sufficiently focused on those competencies that ensure the formation of the readiness of future teachers for innovative activities. Another reason that reduces the real contribution of disciplines of different cycles is their weak interaction with the real practice of innovative activity, real innovative processes in the educational sphere and, importantly, with the practice of professional self-development of a teacher.

During a specially organized discussion, experts also correctly noted an important feature of disciplinary teaching. Readiness for innovative activity is formed, first of all, by students mastering characteristic functions and roles, and teaching is structured in an object-disciplinary manner. Overcoming this contradiction requires teachers to make certain efforts to rearrange the content of disciplines, which is extremely rare in practice. The situation is worst with the disciplines of the general humanities cycle, somewhat better with the disciplines of the special cycle. And the point here lies not so much in the desire and responsibility of teachers, but in their methodological preparedness for such work.

Assessing the productivity of the structure of the process of preparation for innovation activity. The expert assessment of this position was carried out according to the following criteria:

- 1) the adequacy of the structure of training future teachers for innovative activities;

2) consistency of the main links in the system of preparation for innovation activity.

An important condition for the formation of readiness for innovative activity is broad reliance on the interconnection of different subject knowledge when solving practical problems. The foregoing means that the construction of a holistic process of preparation for innovative activity presupposes targeted work to coordinate all levels of teacher education based on common goals. It is from these positions that the structure of the process of preparation for innovative activity was analyzed and assessed.

Despite the fairly high assessment of the potential of the disciplines of the general humanities, general professional and special cycles in terms of the formation of innovative competence, university teachers critically evaluate their consistency in solving the assigned tasks. 70% of experts pointed to low efficiency and poor coordination of interactions between different departments in the process of developing innovative competence among students.

In fact, such an important link as the scientific research activities of students falls out of the system of professional training for innovative activities. To the question “To what extent are the opportunities of research activities at the university used in order to develop innovative competence among students?” 76% of respondents gave a negative answer: 61% of them believe that the capabilities of research and development work are only partially used, 15% that they are actually not used. None of the experts believe that the capabilities of research and development work are fully utilized, and only less than a quarter (24%) note that the capabilities of research and development work are generally used well (“partially not used”).

The weak link in the system of preparation for innovative activity, according to experts, is the teaching practice of students. Answering the question “To what extent does students undergo teaching practice contribute to the formation of their readiness for innovative activity?” They note, first of all, the positions “weakly contributes” (69%) and “moderately contributes” (23%). And only 8% believe that it “strongly contributes.” The answers received were confirmed when analyzing the main disadvantages of using the opportunities of teaching practice in order to prepare students for innovative activities. Experts note the need to improve the entire practice program (73%), change its regulations (56%) and organizational conditions (65%), create fundamentally different didactic tools that ensure the active inclusion of students in innovative processes (64%). In fact, the already established practice of using elective courses in order to prepare future teachers for innovative activities is assessed in the same vein. According to 66% of experts, such courses are offered by a minority of universities. 22% noted that such courses are not conducted, and only 12% believe that most universities provide such courses.

Assessing the productivity of organizational and pedagogical conditions for preparation for innovative activity. The organizational and pedagogical conditions for preparing students for innovative activities were assessed according to the following criteria:

1) consistency of the main structural components of the system of preparing students for innovative activities;

2) preparedness of the teaching staff to solve current problems.

Assessing the general orientation of preparing future teachers for innovative activities, 68% of experts believe that all or almost all universities create conditions for encouraging students to discuss problems of improving education. At the same time, almost every third expert (32%) gave a different assessment: “such conditions are created by a minority of universities.”

Obviously, organizational and pedagogical conditions should not only create the prerequisites for discussing current problems in the development of modern education, but, above all, provide practical training for students in the design of innovative pedagogical processes, the formation of experience in making design decisions and implementing innovations, key mechanisms of self-regulation of innovative activity and self-development of readiness for such activity. The results obtained during the expert survey and subsequent expert discussion make it possible to analyze, among other things, these aspects of the organizational and pedagogical conditions for preparing future teachers for innovative activities.

The greatest difficulties for future teachers arise when performing tasks that are directly related to basic competencies. When forming this particular group of competencies, the lowest productivity of the content of disciplines of the general humanitarian, general professional and special cycles is revealed, as well as the weakest provision of pedagogical tools.

Despite the extremely low overall rating (for all three dimensions), a comparison of indicators of the productivity of educational content and the productivity of educational technologies allows us to judge their relationship to a certain extent).

If we consider this relationship against the background of indicators of the share of graduates' readiness for innovation, then it is legitimate to draw certain conclusions.

When forming the basic competencies of innovative activities, educational technologies reduce productivity indicators of educational content from 4% ("Analysis of the state of teaching activities in an educational institution and identifying what needs to be improved") to 16% ("Planning experimental work of teachers").

In the context of assessing the quality of organizational and pedagogical conditions, one should consider the experts' indication of the lack of clear indicators and criteria for the level of students' preparedness for innovative activities (66% of respondents' assessment), the lack of formation of a system for assessing the readiness of future teachers for innovative activities (estimated by 68% of respondents). In fact, this indicates certain difficulties for university teachers in analyzing, constructing and coordinating the interdisciplinary process of preparing students for innovative activities, and difficulties in developing local didactic structures.

These conclusions and results are quite consistent with the opinion of the discussion participants (experts of the second group) regarding the reasons for the fragmentation of the preparation of future teachers for innovative activities. This issue became the subject of a specially organized discussion at round tables at two scientific and practical conferences.

Experts see the main reasons for the fragmentation and low efficiency of training future teachers for innovative activities in the following:

firstly, university teachers do not have clear ideas about the tasks and content of a teacher's innovative activity, they do not know the specifics of its implementation in the conditions of an educational institution of one type or another;

secondly, teachers, as a rule, do not have clear ideas about the very system of preparation for innovative activity, including its goals and objectives, volume and structure of content, specialized educational technologies, means of control and correction;

thirdly, they do not fully understand the methodology for designing this training.

The conclusions and judgments obtained during the expert survey and subsequent expert discussion allow us to conclude that the currently ongoing preparation of future teachers for innovative activities is not built in a project-based manner as a system. There are purposeful,



functional, content, structural and technological gaps in it, as a result of which it functions as a by-product of professional education and is not the subject of targeted, coordinated actions on the part of teachers and students.

### **REFERENCES**

1. Лазарев В.С., Мартиросян Б.П. Педагогическая инноватика. - М., 2006.; Лазарев В.С. Модернизация механизмов инновационной деятельности образовательных учреждений Педагогическое образование и наука. М., 2013. № 5. С. 6-17.
2. Слостенин В.А. Педагогическое образование: Вызовы XXIII века. М.: МАНПО, 2010.
3. Артамонова Е.И. Формирование инновационной компетентности педагога в процессе обучения в вузе Педагогическое образование и наука. М., 2013. № 5. -С. 17-27.
4. Dzhuraev R. K., Karakhonova L. M. Media education as a factor of increasing the quality of teaching schoolchildren //LIFELONG LEARNING. CONTINUOUS EDUCATION FOR SUSTAINABLE DEVELOPMENT. – 2013. – С. 287-288.
5. Jurayev R. K., Karakhanova L. M. Scientific And Methodical Bases Of The Use Of Electronic Educational Resources In Teaching Biology In General Educational Schools //International Journal of Advanced Science and Technology. – 2020. – Т. 29. – №. 8. – С. 3500-3505.
6. Джураев Р. Х., Карахонова Л. М. Медиаобразование как фактор повышения качества обучения школьников //Образование через всю жизнь: Непрерывное образование в интересах устойчивого развития. – 2013. – С. 322-323.