

# INNOVATIVE EDUCATIONAL ACTIVITY IN HIGHER EDUCATION IN THE CONDITIONS OF MODERN REFORMING OF UKRAINIAN EDUCATIONAL SYSTEM

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**Abstract.** *The processes of creation, development and application of innovations are increasingly spreading in the education system and pedagogical science. The specific historical situation in Ukraine necessitates the restructuring of education, its reforming and approximation to European and world standards. The aim of the study is to study the purposeful impact of these processes on the constant formation and renewal of Ukrainian pedagogical theory and practice with further rethinking the importance of innovation to increase the rating of higher education institution and increasing its competitiveness.*

*Basic research methods are surveys, observation and statistical analysis.*

*The article emphasizes the key values of improving the modern sphere of education, pays attention to the innovative processes that take place in the modern school, and pedagogy, in particular. The peculiarities of the introduction of innovative education in higher education institutions are highlighted. The authors analyze the importance of the application and management of innovative educational processes that can help to increase the level of quality education for the success and competitiveness of higher education institution.*

*The author's team studied the structure and dynamics of the development of educational innovation processes of modern higher education institutions, as well as the scheme of division of the innovation process, which was called the "life cycle of innovation". The importance of*

*developing individual perception of a particular applicant of the proposed innovations during studying at the higher education institution is proved.*

*It is noted that it is important to develop the initiative of teachers of Ukrainian higher education institutions before making decision about necessity to introduce innovations of a certain type.*

**Keywords:** *educational system, higher education institution, implementation, innovation, innovative educational processes, management, realization.*

## **Introduction**

The formation of a modern school of European level is impossible without the introduction of innovation, because it greatly contributes to improving the educational process of student youth. This is the aim of the Law of Ukraine «On Complete General Secondary Education» (2020) adopted by the Verkhovna Rada of Ukraine and the «National Doctrine of the Development of Education in Ukraine in the XXI Century».

The deepening of innovative educational activities in the higher school of the Ukrainian state is also facilitated by the changing of socio-economic processes taking place on its territory. Thus, in recent years, higher education in Ukraine has undergone significant transformational changes: the decision-making process has been democratized; the school has gained more independence in management, etc. This situation affects the necessary to deepen the innovative culture of higher education.

The need in people who are ready to live in a constantly changing society, willing and able to create new things in their activities, accelerates innovative educational processes. Their reaching a new level ensures the stability and development of society.

It should be noted that the deepening of innovation processes in the education system is due to the coexistence and complex relationships in scientific pedagogy and pedagogical practice of traditional scientific pedagogy, which focuses on the objective regularities of education and has research as its main source.

The purpose of writing the article is: research, analysis and identification of ways and means of strengthening innovative educational activities in higher education in Ukraine in the context of reform.

## **The theoretical background**

Frans A. Van Vught (Frans, 1989) also noted that in recent years there have been discussions about the role of higher education in society in various European countries and all of them focus on the need for reorganization to stimulate innovation in higher education institution and implementation of innovative behavior of them.

Although research about higher education innovation becomes more, no consensus has been reached on key concepts and central research issues. To meet

these challenges, Yuzhuo Cai (Cai, 2017) proposes to develop a new field of research - the study of innovation in higher education by integrating two disciplines, those are innovation research and research in higher education. The author suggests an analytical basis for understanding the innovation process, especially in the context of higher education, as this structure may have the potential to guide practitioners to smarter of innovation implementation.

The problem of creation, development and application of innovations in higher educational institutions of Ukraine is also reflected in the works of Ukrainian scientists M. Godiyev, V. Vynogradova, N. Strizhak, G. Litovchenko, N. Iordanova, etc.

The process of deepening innovative educational activities in higher education institutions during the modern reform of the educational system is given much attention by a number of leading scholars and educators: L. Danylenko, L. Karamushka (Danylenko & Karamushka, 2003), O. Bondarchuk (2003), V. Bondar (2000), L. Vashchenko (2005), V. Kremen (2005), L. Danylenko (2004), V. Maslov (2004), O. Savchenko (2008), T. Sorochan (2003), etc. Their scientific works are aimed at researching problems that are directly related to the deepening of innovation processes in the higher education institutions.

Therefore, based on our research and analysis of the scientific achievements of the above scientists, we can conclude that the relevance of our chosen topic of this research. Confirmation of the authenticity of this conclusion are also the scientific works of such leading Ukrainian and foreign scientists: K. Angelovska, A. Barabanshchikov, B. Gaevsky, N. Rodiuk, O. Grishnov, I. Kuchynska, G. Tymoshko, T. Ivanova, I. Osadchy, I. Ziaziun, V. Rodina, O. Rudnytska, I. Yermakova, O. Kozlova, L. Myshkina, V. Palamarchuk, O. Popova, V. Slastinina, M. Fuplen, etc. They consider innovative innovations in the educational process of students and pupils as a special scientific concept. It needs a comprehensive study, because (according to scientist G. Tymoshko) it is a pedagogical system and at the same time an element, individual formation, dialectical integrated unity of social values, between which there are certain connections and relationships that are formed, implemented and improved in various ways of professional and pedagogical activity and communication (Polishchuk, 2019).

That is, pedagogical innovation is the constant search and implementation of scientific, most effective technologies of teaching and education, the result of which should be the formation of highly adapted to changing conditions, active creative individual who can analyze, make necessary decisions.

It should be noted that the policy-making bodies of Ukraine pay great attention to the innovative development of the domestic educational system, to the implementation of innovative technologies in the educational process. In particular, the problem of development and implementation of innovative technologies in the educational process of Ukrainian higher education institutions is reflected in the action plan for 2021-2023 on the implementation of the Strategy

for the development of innovation for the period up to 2030 (Pro zatverdzhennia, 2021), the Laws of Ukraine "On Innovation Activities" (Zakon Ukrainy Pro innovatsiinu diialnist, 2002), Regulations on innovative educational activities in education system of Ukraine (Danylenko, Dovbyshchenko, Malovanyi, & Nochvinova, 1999), the Law of Ukraine «On Complete General Secondary Education» (Zakon Ukrainy Pro povnu zahalnu seredniu osvitu, 2020), etc. This is due to the fact that (as the experience of European educational institutions shows) the innovative development of the educational system is the carrier of everything new, progressive, which brings positive changes in each educational institution.

Scientist I. Dychakivska, revealing the essence of the innovation process in the modern domestic educational school and pedagogy, pays attention to the specific features of innovative learning. In particular, I. Dychakivska says that the development of systems and content of education in the modern world takes place in the context of global educational trends (mega-trends), among which the most popular are:

- mass nature of education and its continuity as a new quality;
- the importance of education for the individual and society;
- focus on the active development of human (student) methods of cognitive activity;
- adaptation of the educational process to the demands and needs of society;
- orientation of learning to the individual, providing opportunities (Polishchuk, 2019).

Based on the above, we can conclude that innovation is one of the dominant areas of high-performance education at higher education institutions. Innovation directs student youth to self-determination in changing social conditions, their readiness to perceive and solve important tasks facing the educational institution.

Therefore most researchers (G. Yelnikov, L. Kalinin, Y. Pelekh, V. Shcherban) agree that the structure of innovative learning optimally corresponds to the nature of modern social processes. But at the same time, as noted by scientists L. Danylenko and L. Karamushka, to increase the effectiveness of innovation it is necessary to implementation of innovation to the educational process of higher education together with a scientific approach.

For this purpose, first of all, it is necessary to choose a strategy for the development of educational institutions. To do this, we must pay attention to certain problems that need to be solved, ie problems on the successful solution of which directly affect the results of the educational institution function. Therefore, they need to be identified and ranked in order of importance, and then innovate. For this purpose, i.e. to solve successfully a significant problem, it is necessary to select certain innovations (didactic, educational, management systems, components, technologies, etc.). Sources of relevant information can be:

educational periodicals, websites, scientific and methodological publications, consultancy with specialists of methodological services, scientists, etc. (Danylenko & Karamushka, 2003).

Innovations as a category, their types, are explored from different points of view. For example, Robert J. Sternberg, Jean E. Pretzand, James C. Kaufman in their publication point to eight types of innovation, as types of creativity and human creativity. Among them, researchers distinguish replication, redefinition, forward Incrementation, advance Forward Incrementation, redirection, reconstruction / redirection, reinitiation, integration - interpretations of each of them are qualitatively different (Sternberg, Pretzand, & Kaufman, 2003). Therefore, when choosing an innovation, it should be remembered that the successful solution of a problem that takes place at educational institution depends entirely on the implementation of the innovation, which is aimed at solving the problem. The choice of innovation, the implementation of which will help solve the identified problems of the educational institution, is a necessary step to improve its educational position.

It should be note that if we want to succeed in implementing innovations in the educational process of higher education, we should act according to certain rules that appear as norms, guidelines. That is, we must build our innovation activities on the basis of adherence to certain principles that express the common in the organization of their management, which covers all their stages and contributes to their success and efficiency. Such principles, which are reflected in the scientific literature and represent the specific laws and regularities of implementation of innovation processes include:

- the principle of organized innovative change in the state of the education system;
- the principle of transition from stable mechanisms of innovation processes to consciously controlled ones;
- the principle of information, material and technical base, staffing of the main stages of innovation processes;
- the principle of forecasting reversible or irreversible structural changes in the innovative socio-pedagogical environment;
- the principle of accelerating the development of innovative processes in the education system;
- the principle of strengthening the sustainability of innovative educational processes.

All these principles are elements of a comprehensive system of organization and management of innovative processes in the field of teaching and education. They interact closely with each other, which due to the synergistic effect enhances the effect of each of them (Danylenko & Karamushka, 2003).

Therefore, the deepening of innovation processes in higher education institutions in the context of reforming the educational system is a very important issue. The research of scientists of the University of Tehran (Iran) H. Tokhidi and

M. Jabbari (Tohidi & Jabbari, 2012). demonstrates the importance of innovations in educational institutions. It pays great attention to the importance of innovation and emphasizes its crucial role in the growth, survival and success of the organization (including higher education). Associate Professor of Queensland University of Technology (Australia) R. Owen (Owen & Koskela, 2006) and the German scientist Seiwert Lothar (Seiwert, 2010) also emphasize this in their research.

Thus, the development of any educational institution (including higher education) can't be done other than through the development of innovations, through the innovation process, which is a complex phenomenon in its structure. At the same time, a very important point in the implementation of innovation in higher education institutions in order to improve the educational process largely depends on the composition (structure) of innovation processes.

According to scientists L. Danylenko, L. Karamushka, the following levels are distinguished in the structure of innovation processes:

- 1) subject-technological micro-level, which divides innovations into parts (stages, phase, cycles), analyzing its content;
- 2) the macro-level, which considers the interaction of certain innovations, determines the features of their combination, transformation, etc.

At the same time, according to scientists M. Vynogradsky, S. Belyaeva, A. Vynohradarska, O. Shkanova, scheme of division of the innovation process into stages which was called "life cycle of innovation" is formed in pedagogical innovation. In particular, it covers:

- 1) the stage of a new idea origin, the beginning of a new concept of innovation (start). Conventionally, it can be called the stage of discovery, which is usually the result of basic and applied research or life "enlightenment";
- 2) the stage of the invention. At this stage, there is the creation of innovation, i.e. the embodiment of a new idea in a particular object, material or spiritual project, model;
- 3) the stage of implementation of the innovation. Its essence, as a rule, is the practical application, correction, refinement of a new tool. The stage is completed by obtaining a stable effect from the innovation, after which it exists autonomously. The prerequisite for the next stage of the innovation process is openness, receptivity of the pedagogical community to innovation. The phase of its use begins just then;
- 4) the stage of extension of innovation (maturity). Its essence is wide implementation, diffusion (penetration) into new industries (education institutions);
- 5) the stage of saturation in a particular industry. At this stage, the innovation is mastered by many people in all areas of pedagogical management processes. It loses its novelty just then (routine

- innovation). This stage may finish in the emergence of an alternative innovation or its absorption by more efficient system;
- 6) the stage of recession (crisis, finish). Its peculiarity is the completeness of the possibilities of applying innovation in new conditions, industries;
  - 7) the stage of irradiation (Latin irradiare - to shine, radiate) of the innovation. This stage is not inherent in every innovation. The routine innovation does not disappear, but it is modernized and reproduced, often significantly affecting the development of educational institutions.

The presence or absence of the last two stages depends on the innovation potential of the educational institution that implements a particular innovation. Each stage of the life cycle of innovation is characterized by specific laws and contradictions.

This approach to the introduction of innovations in the educational process of higher education will certainly improve the quality of its activities, which will increase the rating of the educational institution and its competitiveness, which is so important in reforming the Ukrainian educational system.

### **Methodology, organization and results of the research**

To identify the individual perceptivity of a particular applicant of the proposed innovations while studying at higher education institution and to identify initiative in teachers of higher education institution in Ukraine for deciding about necessity to implement innovations of a certain type, we conducted a survey of 2-4-year students and teachers of Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University and Kamianets-Podilskyi Ivan Ohienko National University. 548 students by specialties of Preschool Education, Philology (Ukrainian language and literature), Management, and 37 teachers from 27 to 57 years were interviewed.

Such sample of 2-4-year students is explained by the fact that senior students have already adapted to learning and they can perceive adequately the innovations used by teachers during the teaching of academic disciplines. *The basic methods of our research* are observations, surveys and statistical analysis. The questionnaire was completed using google.com/forms, as this online service is actively used during the educational process. All responses from students and teachers were anonymous and had no time limit.

The questionnaire developed by the authors consisted of a battery of open-ended and closed-ended questions for both teachers and students. 13 questions were identified for teachers. 8 questions were developed for students.

The content of the questions asked to teachers is as follows: 1. Do you have information about the concepts of "innovation in education" and "innovation"? (Yes; no; another answer). 2. Do you think it is appropriate to implementation any innovations in Ukrainian education? (Yes; no; another answer). 3. What

innovations do you think are effective? (Effective are innovations that promote their application in new conditions, areas of education; Those ones that focus on the scientific approach to management in the implementation of innovations; The effectiveness of the implementation of innovations depends on their appropriate identification and ranking according to scientific needs; Effective are only didactic innovation, another answer). 4. What innovations do you think are ineffective? (Ineffective are those innovations that require adaptation to educational conditions; Those ones that require the formation of new personal qualities or character traits; Those ones that require additional funding; Ineffective are educational, managerial innovations; another answer). 5. What sources have you used or are currently using to acquire and master innovations? (Internet, literary sources and professional publications; webinars, participation in conferences, seminars; I do not use any sources, they are ineffective; another answer). 6. Whose or what recommendations do you use the selected source on? (Recommendations of colleagues, attending conferences, webinars, seminars, etc.; from the Internet; received an information letter by e-mail; information from social networks; I do not use the recommendations; another answer). 7. Which of the following principles of innovation implementation do you follow? (The principle of transition from stable mechanisms of innovation to consciously controlled; the principle of implementation of informative, material and technical, staffing realization of the innovation main stages; the principle of forecasting reversible or irreversible structural changes in the innovative socio-pedagogical environment; the principle of accelerating the development of innovation in education; the principle of strengthening the sustainability of innovative educational processes; I do not follow any principles; another answer). 8. Are you aware of the "life cycle of innovation"? (Yes; no; another answer). 9. Do you have difficulties in implementing innovations, if so at what stage(s) of the innovation life cycle? (There are no difficulties; at the stage of birth of a new idea, the emergence of a new concept of innovation (start); at the stage of invention - the creation of innovation, ie the embodiment of a new idea in a particular object, material or spiritual project sample; at the stage of innovation implementation, when the phase of its use begins; at the stage of dissemination of innovation (maturity), in its wide implementation, diffusion (penetration) into new areas (educational institutions); at the stage of saturation with innovations in a particular field, loss of its own novelty (routine innovation); at the stage of recession (crisis, finish) - the exhaustion of opportunities for innovation in new conditions, areas; at the stage of irradiation (Lat. irradiare - shine, radiation) in the process of routine innovation does not disappear as such, but it's modernized and reproduced; another answer). 10. How do you overcome difficulties at the (stage) stages of mastering and implementing innovations in your own teaching activities? (Acquisition of new knowledge, self-education, additional training; I ask for advice from colleagues and specialists; I look for additional materials in



information sources; I do not solve difficulties; another answer). 11. Do the personal qualities of the teacher matter for mastering innovations? (Yes; no; another answer). 12. Give an example of the necessary personal qualities of the teacher, which will help him/her master the innovations? 13. Does the contingent of higher education applicants (age category, level of their intellectual abilities, social environment, life views, etc.) matter for the teacher to choose and use certain innovations in teaching the discipline? (Yes; no; another answer).

The content of the questions offered to applicants of different specialties was the same, because we did not intend to identify the ratio of specialty and specific innovations. Our goal was to identify students' attitudes to innovation and identify the effectiveness / inefficiency of such a process. The first question offered to teachers and students was the same, as this question is fundamental for further research.

1. Are you familiar with the concepts of "innovation in education" and "innovation activities"? (Yes; no; another answer). 2. In your opinion, is it appropriate to implement any innovations in Ukrainian education? (Yes; no; another answer). 3. Are you aware of such types of innovations as material and technical and social? (Yes, no, another answer). 4. Choose material and technical innovations from the following ones: (machinery; technology; production materials; literature; legal; pedagogical innovations). 5. Choose from the following innovations social ones: (economic; organizational and managerial; social and managerial; legal; pedagogical; another answer). 6. What is pedagogical innovation - it is...? (innovations in pedagogical activities; changes in the content and technology of teaching and increase their effectiveness; innovations in any field that are implemented in education; only new technologies; I do not know; your answer). 7. Choose pedagogical innovations from the following ones: (project method; school-park; creating schemes of network interaction; individual educational trajectories; tutoring; methods of collective learning with creating situations of mutual learning; play methods (quizzes, debates); new training programs; educational technologies only; innovations related only to the creation of computerized courses and software training; political technologies; creation of new methods of evaluating educational results; none of the listed methods). 8. Does the readiness of students to innovate in the educational process matter? (Yes, no, another answer).

The average score for each question after generalization was determined by a statistical method to identify the arithmetic mean.

Table 1 Quantitative data according to the teacher's questionnaire, %  
(created by the authors)

No questions / specialty	No questions	1	2	3	4	5	6	7	8	9	10	11	12	13
Preschool Education	1	100	100	56,8	21,6	54	51,4	13,5	70,3	24,3	62,2	94,6	-	78,4
	2			13,5	13,5	48,6	56,8	24,3	29,7	5,4	40,5	0	-	16,2
	3			40,5	29,7	86,5	40,5	21,6		5,4	48,6	2,7	-	2,7
Philology	4			16,2	5,4		27	16,2		27			-	
	5				5,4		21,6	10,8		8,1			-	
Management	6						0	10,8		5,4			-	
	7							24,3		18,9			-	
	8									5,4			-	

Due to the fact that the number of teachers at the department is different, the indicators of answers in Table 1 are given in percentages of answers given by teachers. Thus, the statistical generalization of the results involved summarizing the results for each individual question for all departments, which is combined and represented by the average value in percent.

Let's analyze the results of the research. So, answering *the first question*, all teachers gave answers that they have information about the concepts of "innovation in education" and "innovation activities"? Option "Yes" was chosen by 100% (37) of teachers; "No" - 0; and "Another answer" - 0.

Answering *the second question* about the appropriateness of introducing any innovations in Ukrainian education, option "Yes" was chosen by 100% (37) of teachers; "No" - 0; and "Another answer" - 0.

Teachers' answers to *the third question* were divided as follows: effective innovations are those innovations that contribute to their application in new conditions or in the field of education - 56.8% (21); 13.5% (5) emphasize the effectiveness of those innovations that focus on the scientific approach to management in the implementation of innovations. 40.5% (15) say that the effectiveness of innovations depends on their appropriate identification and ranking according to scientific needs. And 16.2% (6) chose the answer that only didactic innovations can be effective. The answers to this question provided an opportunity to choose several answer options by one teacher, as evidenced by the sum of the generalized percentages.

Answers to *the fourth question* about ineffective innovation were also divided. Thus, some of the surveyed teachers believe that such innovations that need to be adapted to the conditions of education are ineffective - 21.6% (8). The implementation of such innovations that require the formation of new personal qualities or character traits of the specialist, considered ineffective - 13.5% (5);

29.7% (11) of innovations that need additional funding are also considered ineffective. 5.4% (2) of teachers report the inefficiency of using only educational and managerial innovations. 12 teachers provided their own answers to the "Another answer" option. Thus, 5.4% (2) of teachers consider literary innovations ineffective due to declining public interest in literature and reading. Also ineffective, according to teachers, are innovations that do not achieve the goal and those that do not improve the efficiency of the educational process, or if the costs (tangible and intangible) are greater than the result - 24.4% (10).

Answers to *the fifth question* showed that 54% (20) of educators work in the Internet; 48.6% (18) of the surveyed teachers prefer literary sources and professional publications. Teachers also consider webinars, participation in conferences, seminars, symposiums, etc. to be useful for obtaining new information - 86.5% (32) of teachers. This question provided an opportunity to choose several answer options, so the sum of generalized indicators in percent is consistent with the received answers.

The answers of the teachers to *the sixth question* are quite interesting. It should be noted that it was proposed to choose several answer options, which allows teachers to learn more about the methods and opportunities for innovation in education in Ukraine. Thus, 51.4% (19) of teachers listen to their colleagues' recommendations; 56.8% (21) of educators believe that personal attendance at conferences, webinars, seminars, etc. is important; the Internet is also effective for 40.5% (15) of teachers; 27% (10) of teachers pay attention to invitation letters sent to e-mail addresses; 21.6% (8) of teachers are interested in information from social networks, groups and posts.

*The seventh question* also provided for the possibility for teachers to choose several answers. 13.5% (5) of respondents say about the compliance with the principle of transition from stable mechanisms of innovation to consciously controlled; 24.3% (9) of teachers emphasized the importance of the principle of implementation of informative, material and technical, staffing realization of the innovation main stages; 21.6% (8) of specialists mentioned the importance of the principle of forecasting reversible or irreversible structural changes in the innovative socio-pedagogical environment; 16.2% (6) of teachers say about the principle of accelerating the development of innovation in education; 10.8% (4) indicate the compliance with the principle of strengthening the sustainability of innovative educational processes; 10.8% (4) of teachers state that they do not follow any principles and 24.3% (9) of teachers emphasize the expediency of following all the principles of the innovation implementation process.

Teachers' answers to *the eighth question* are clear, as it concerns whether teachers are aware of the "life cycle of innovation". The answer "yes" was given by 70.3% (26) of teachers, "no" - 29.7% (11) of teachers.

The following were answers to *the ninth question*. Thus, 24.3% (9) of respondents haven't difficulties; 5.4% (2) of teachers have difficulties at the stage of birth of a new idea, the emergence of a new concept of innovation (start); 5.4%

(2) of respondents have difficulties at the stage of invention - creating an innovation, i.e. the embodiment of a new idea in a particular object, material or spiritual project sample; 27% (10) of teachers experience difficulties at the stage of innovation implementation, when the phase of its use begins; 8.1% (3) of teachers have difficulties at the stage of dissemination of innovation (maturity), in its wide implementation, diffusion (penetration) into new areas (educational institutions); difficulties arise for 5.4% (2) of teachers at the stage of saturation with innovations in a particular field, loss of its own novelty (routine innovation); 18.9% (7) of teachers have difficulties at the stage of recession (crisis, finish), where there is an exhaustion of opportunities for innovation in new conditions, areas; 5.4% (2) of teachers have difficulties at the stage of irradiation of innovation, in the process of routine innovation does not disappear as such, but it's modernized and reproduced in a new form.

Opportunity to give several options for answering *the tenth question* was offered to teachers. The following results were obtained: 62.2% (23) of teachers acquire new knowledge, go in for self-education and additional training; 40.5% (15) of teachers ask for advice from colleagues and specialists; 48.6% (18) of teachers are looking for additional materials in information sources.

Answers to the closed *eleventh question* were clear. 94.6% (35) of teachers chose "Yes"; answer "No" - 0%, option "another answer" 2.7% (1) of teachers said that "the most important were the personal qualities of the teacher" and 2.7% (1) of teachers said that "personal qualities were urgent".

The results of the answers to *the twelfth question*, which provides examples of personal qualities of the teacher that will help him/her to master the innovations, are presented in Fig. 1.

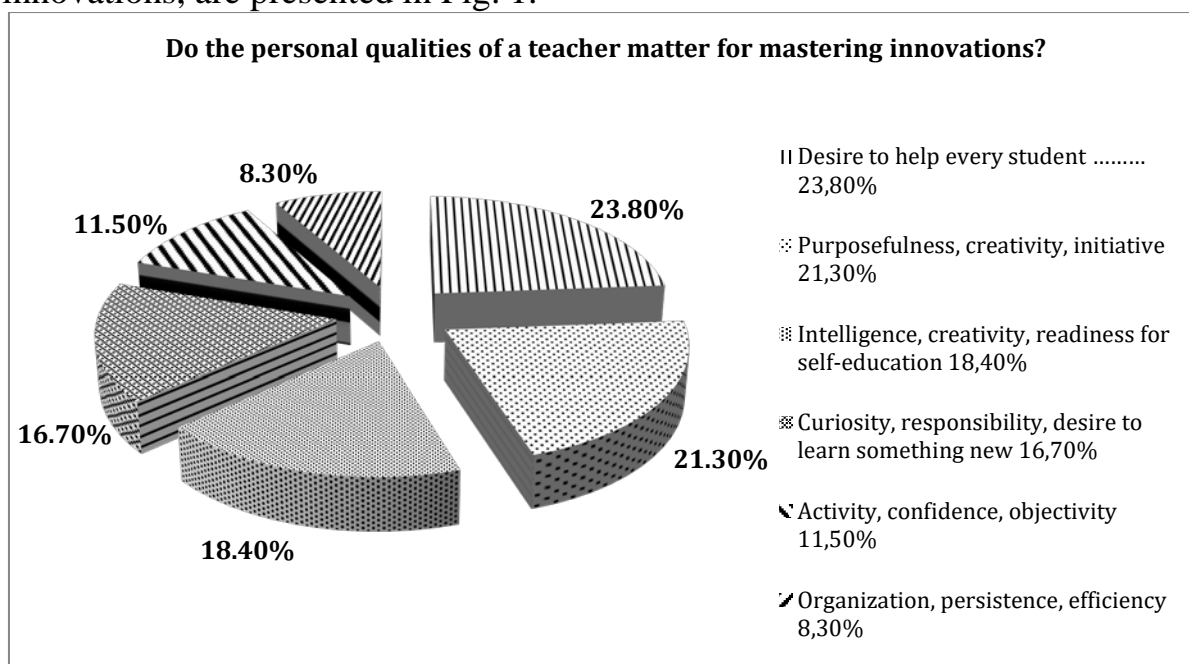


Figure 1 Personal qualities of the teacher (created by the authors)

The thirteenth question is closed type. 78.4% (29) of teachers answered "Yes", 16.2% (6) - "No". The following answers were received to the "another answer" option: 2.7% (1) of teachers said that "it was more likely than not. Although, as the experience of the teacher-innovator V. Shatalov shows, the personality of the teacher decides everything; other characteristics of the applicants mentioned in the question do not matter". 2.7% (1) of teachers said that the contingent of higher education applicants is important when implementing someone's innovation. This indicator does not matter for the implementation of own, author's innovation (experience of V. Shatalov)".

548 applicants of the above specialties in equal proportions were involved in the survey of students. The number of applicants for specialties varies. Thus, 245 students are in Preschool Education, 92 students are in Management and 211 students are in Philology. In order to process and summarize the obtained data, the answers for each specialty are 100%, from which the averages for each question are calculated. Table 2 presents the generalized indicators by specialties. Theoretical analysis and description of answers were subject to the following generalization for each answer of students.

Analyzing the responses of applicants for the above specialties, the following results were revealed.

Table 2 *Quantitative data on the questionnaire of higher education applicants, % (created by the authors)*

No questions / specialty	No questions	1	2	3	4	5	6	7	8
Preschool Education	1	90,1	93,4	50,3	30	6,6	90,3	-	91,7
	2	7,3	6	49,6	32	8,2	9,7	-	8,3
Philology	3	2,6	0,2 0,2 0,2		26,8	70,4	0	-	0
	4				7,5	6	0	-	
Management	5				2,2	8,8		-	
	6				1,3			-	

To the first question show such results: 90.1% (497) of respondents answered "Yes", 7.3% (40) answered "No"; 2.6% (11) of students provided the "Another answer" option – "I know approximately".

Answers to the second question were as follows: the answer "Yes" was chosen by 93.4% (512) of applicants, the option "No" was supported by 6% (33) of respondents; the following answers were received in the "Another answer" option: 0.2% (1) of students said that "it was appropriate to implement adequate innovations, not any", 0.2% (1) of students said that "depending on whether these

innovations were needed", 0.2% (1) of students said that "depending on what innovations they proposed to implement and for what purpose".

To the third question the following answers were received: "Yes" was supported by 50.3% (276) of applicants, "No" was answered by 49.6% (272) of respondents.

To the fourth question, where it was necessary to choose material and technical innovations: 30% (165) of applicants chose machinery, 32% (176) - technology, 26.8% (147) of students chose production materials, 7.5% (41) chose literature; 2.2% (12) - legal and pedagogical innovations were supported by 1.3% (7) of students.

The answers to the fifth question, where it was proposed to choose social innovations, are as follows: 6.6% (36) of students chose economics, 8.2% (45) of students chose organizational and managerial, 70.4% (386) chose social and managerial, 6% (33) - legal, and pedagogical ones were selected by 8.8% (48) applicants.

The sixth question is proposed to reveal the knowledge of students about what is meant by "pedagogical innovation". A number of correct and incorrect statements were submitted, including: "Innovations in pedagogical activities, changes in the content and technology of teaching, and increase their effectiveness" as the correct answer 90.3% (495) of applicants chose; "Innovations in any field implemented in education" were supported by 9.7% (53) of students; "Only new technologies" - 0%; I do not know - 0%.

The results of students' answers to the seventh question, where they were asked to choose the types of pedagogical innovations, are presented in Figure 2.

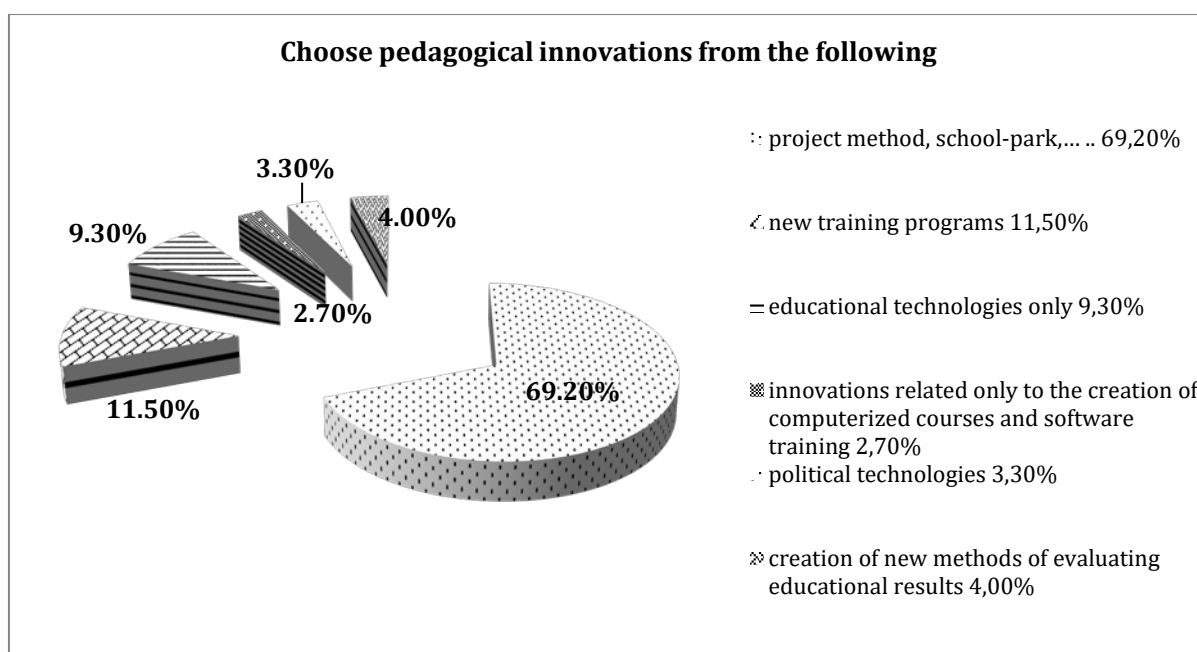


Figure 2 Types of pedagogical innovations (created by the authors)

Thus, *the seventh question* highlighted the orientation of students of higher education institutions in pedagogical innovations that are offered and used in the teaching of academic disciplines. The obtained result on this issue is important for our research, as it shows a certain level of students' awareness of what is new in the education of Ukraine, as well as is a stimulus to new research in this area.

The answers to *the eighth question* gave the following results: the answer "Yes" was chosen by 91.7% (503) of applicants, the option "No" was supported by 8.3% (45); the option "another answer" received 0%.

The answer to the eighth question is closed, as the problem of readiness of applicants of higher education to innovate in the educational process and the willingness of teachers to implement selected innovations will be explored in the future research, we believe that this issue attracts more scientists and needs more detailed study.

### **Conclusions**

Our research and the obtained results confirmed and supplemented already known theories and developments, as well as contributed to the generalization of new results on the problem under study. Based on the highlighted data, we can say that the process of introducing innovations in the educational activities of higher education is attracting the attention of a growing number of modern scientists, both foreign and Ukrainian. It was found that the issue of practical implementation and deepening of innovations in the Ukrainian school is in the field of view of L. Karamushka, L. Danylenko, V. Bondar, L. Vashchenko, V. Kremenyha, the process of creating and developing innovations is considered in the works of M. Godiev, V. Vinogradova, N. Strizhak, G. Litovchenko, N. Iordanova; innovations in the educational process for student youth as a special scientific concept requires a comprehensive study (G. Timoshko) and is a pedagogical system and at the same time a separate element.

*New results include* the understanding that pedagogical innovation is the constant search and practical implementation of scientific, most effective technologies of teaching, which should result in the formation of highly adapted to changing conditions, active creative individual of the teacher who can analyze and adopt the necessary innovative decisions in the process of own pedagogical work. In order for innovations to effectively contribute to the quality educational process of higher education, necessary condition is personal readiness, initiative and orientation of the teacher both to search for innovations and to create their own ones and take into account personal readiness of students and their interest in acquiring new innovative competencies. The attitude of students to innovations, their personal perception or rejection of innovations deserves further study. It is important to study the causes and factors, personal attitudes that can complicate the process of innovation in education in Ukraine.

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