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## Anti-innovation barriers in the professional activity of university lecturers in Ukraine and ways to overcome them: diagnostic aspect

### Антиінноваційні бар'єри в професійній діяльності викладачів вищої школи та шляхи їхнього подолання: діагностичний аспект

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#### Abstract

The article presents the analysis of anti-innovation barriers in the professional activity of lecturers in Ukraine and outlines the ways to overcome this phenomenon. For this reason the discussions of domestic and foreign scientists on the given problem are introduced; the scientific bases of innovative activity of pedagogues are defined, its essential characteristics are outlined; the reasons for the lecturers' and teachers' of general secondary education resistance to pedagogical innovation are identified. The authors represent an experimental scientific study of the problem in the practical activities of educational institutions in Ukraine. The subjects of the experiment were lecturers, students and school teachers in different regions of Ukraine. The pedagogical experiment conducted at the diagnostic level allowed to identify the main problems of educational activities in the field of pedagogical innovation and to propose an original method aimed at overcoming the reasons that hinder the introduction of innovative

#### Анотація

У статті представлено аналіз антиінноваційних бар'єрів в професійній діяльності викладачів вищої школи України та намічено шляхи подолання означеного феномена. З цією метою наведено дискусію вітчизняних та зарубіжних учених з порушеної проблеми; визначено наукові засади інноваційної діяльності педагогів, окреслено її сутнісні характеристики; виокремлено причини супротиву педагогічній інновації в діяльності викладачів вищої школи та учителів закладів загальної середньої освіти. Автори репрезентують експериментальне наукове дослідження проблеми в практичній діяльності закладів освіти України. Суб'єктами експерименту виступили викладачі, студенти та учителі шкіл різних українських регіонів. Педагогічний експеримент, проведений на діагностичному рівні, дозволив виявити основні проблеми освітньої діяльності в галузі педагогічної

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principles into the educational process of higher educational institutions.

**Key words:** anti-innovation barriers, higher educational establishments, pedagogical experiment, students, teachers, university lecturers.

## Introduction

The research problem is due to the need and feasibility of integrating Ukraine into the global educational environment and is determined by a number of educational, social and economic factors. The importance of its development and practical application is determined by modern requirements of the state and society. They are reflected in the legislative documents that recommend target guidelines and requirements for modern scientific activity of teachers of higher education in Ukraine. In addition, the problem reflects the main trends in innovation in both domestic and global research in fields of pedagogy, sociology, psychology, economics and management.

Particularly relevant are the issues of involving teachers in active innovation, which identifies important trends in the process of modernization of domestic higher education. Such activities are considered by researchers in the system of pedagogical innovation, which is interpreted as a generalized name of a new pedagogical product (theoretical, practical), which is embodied in the educational process through concepts, theories, technologies, systems, methods, etc.

The main areas of such activities are:

- change and improvement of the content of educational programs in accordance with modern requirements of society;
- application of innovative educational technologies;
- development of academic cooperation and economic mobility;
- overcoming resistance to innovation by lecturers and teachers of general secondary education.

Theoretical research and study of practical aspects of the problem of innovation have identified a number of contradictions.

This is a contradiction between:

- the requirements of the state and society to the quality of innovative work of

інноватики та запропонувати оригінальну методику, спрямовану на подолання причин, що гальмують введення нового в освітній процес закладів вищої освіти.

**Ключові слова:** викладачі закладів вищої освіти, вища школа, інноваційні бар'єри, педагогічний експеримент, студенти, учителі.

pedagogues and the lack of purposeful work in higher educational institutions to involve them in this type of activity;

- the interest of the educational environment in innovatively active teachers of higher education and the presence of resistance to pedagogical innovations;
- the need for scientific substantiation of the causes of this phenomenon and insufficient development of ways to overcome it in pedagogical research;
- the importance of the problem of overcoming resistance to innovation and insufficient scientific and methodological support of the educational process of higher education to solve it.

Resolving certain contradictions, in our opinion, will help increase the efficiency of the process of training highly-skilled professionals for the educational sphere of Ukraine.

## Theoretical basis

The study of the problem of involving lecturers in innovative activities revealed the presence of a significant amount of research on this issue. It was studied by specialists in the field of pedagogy, psychology, sociology, linguistics, etc. Interdisciplinarity of this field of knowledge allows us to highlight the importance and necessity of its solution at all specified levels.

Thus, in the field of pedagogy it was studied by I. Dychkivska, G. Kelly, A. Maslow, L. Podymova, S. Rogers, L. Robinson, O. Starovoit, S. Tolochko and others.

They consider "innovation" in the educational process of higher education as the introduction of new content, methods and forms of teaching and education, the organization of joint activities of the teacher and the student.

These researchers have proposed numerous classifications of pedagogical innovation. The most common are:

- a) innovations aimed at modeling new forms, technologies and methods of the educational process;
- b) innovations that involve updating the content of education and ways to improve it.

In pedagogical research it is stated that the readiness to carry out innovative activities can be manifested only by the implementation of the following components: motivational, creative, technological and reflective. Furthermore, the innovative activity of higher education is largely determined by the following factors: the individuality of the teacher and the student, the characteristics of the academic group, a higher educational institution and so on.

Individual teaching style is a professional quality of a teacher, which is formed under the influence of a number of factors. These include: urgent changes in the society in order to train such a specialist who will not have a set of established qualities, but who will strive for certain changes and the acquisition of new skills needed in the future profession. Such qualities include the ability to work in a team, to carry out self-analysis, to be professionally mobile, to feel responsible for one's own choices, and so on. The ability of the subjects of the studying process to use Internet resources for educational purposes should play a primary role. The mechanisms of this activity implementation are presented in the study by A. Anosova, who analyzes the dependence of the internal culture of the individual on the culture of their active online activity and offers recommendations for the rational use of the Internet (Anosova, 2011).

We agree with S. Tolochko's opinion that the following components of the formation of innovative culture are important in modern education: *knowledge-based* (basic knowledge and skills, teaching methods, capabilities); *technocratic* (knowledge that is substantiated and already tested by experience; standards; ideals, which verify the level of training); *humanistic* (intellectual needs and personal growth); *culture-based* (integration of academic disciplines, creation of a holistic image of culture); *future-oriented* (prediction of trends in education in the future) (Tolochko, 2020, p. 80). We activate all these components in the process of teaching students in higher education.

Based on the analysis of scientific sources, we single out innovative technologies, especially relevant in the context of the COVID-19 infection, which take into account the modern realities of life and are aimed at self-development

of the subjects of the educational process, creative self-expression:

- adaptive learning (use of information technology to obtain information from different fields of knowledge);
- remote learning (involves the creation of an online educational environment that is created on the Internet and allows the learner in a virtual classroom to participate in the simultaneous discussion of problems);
- mass open online courses (online classes designed for a large number of participants for online discussions with teachers and other students);
- "cloud" learning (joint work of a network of computers that are integrated on the Internet and is based on the activities of a large number of users of both accredited universities and private educational institutions);
- synchronous and asynchronous learning (synchronous education involves the simultaneous participation of students and teachers in lectures and practical classes at a specific time; asynchronous – involves the processing of educational material, tests and tasks at any convenient pre-determined time);
- blended learning (a combination of real face-to-face learning with a teacher in the classroom with interactive opportunities based on digital materials (students are present in the classroom once a week instead of three, and all other learning activities will be transferred online);
- inverted learning (an alternative method of learning, when lectures and practical study of the subject take place online, and homework is done in a real classroom), etc.

The leading role in the implementation of these technologies should belong to the teacher-innovator, who realizes the expectations of students for the organization of flexible education, creates interdisciplinary programs and learns new functions: a curator of the educational program, a facilitator, an educational tutor, a mentor, a consultant, a designer of an individual educational vector.

V. Tkachenko considers the management of innovative activity of the teacher as a necessary aspect of work on introduction of innovations in the educational process of universities, which means the realization of the following stages:

1. Initiation (from the Latin *initiatio* - the implementation of the sacraments) –

activities that are aimed at choosing the goal and setting targets of innovation, the search for new creative ideas, their justification and materialization. Before the introduction of innovative technologies, the head of the educational institution should analyze the typical situation and find out what changes need to be made.

2. Marketing of innovations - a process aimed at studying the market of consumers of innovations, their interests; determines the system of actions for the implementation of innovations, provides advertising, organization of "public relations". Ethics of pedagogical innovations requires the teacher to follow important recommendations. The main requirement should be: "Do no harm!", because innovations should not destroy the health of children, parents and teachers.
3. Engineering of innovations is a consulting service for the development of projects, programs and the system of innovation implementation. Engineering should contribute to a set of works, which include: conducting preliminary research; justification for the choice of innovative ideas; development of recommendations for new creative activities; determining the scope and content of work on the implementation of innovation; development of target programs. (Tkachenko, 2018).

The results of the scientific literature review showed that the researchers not only outlined the importance of innovation and the analysis of its essential characteristics but also identified the cause of such a phenomenon as resistance to pedagogical innovation.

They presented classifications of innovation barriers, discovered the reasons for their occurrence, outlined anti-innovation stereotypes that get in the way with the creative process of teachers. For example, I. Dychkivska interprets anti-innovation barriers as "external or internal barriers that hinder innovation" (Dychkivska, 2004, p. 255). The same opinion is held by O. Starovoit, who notes that innovation barriers often arise in response to existing contradictions in society. Sometimes they are caused by the internal conflicts inherent in the individual. Thus, according to the scientist, the study of the essence of innovation barriers should contribute to the development of innovative human culture. She offers a classification of these barriers, identifying social, organizational, methodological and logistical barriers (Starovoit, 2014).

In psychological science, barriers to innovation have been studied by scientists who have considered them as an integral part of any activity. They used this definition to identify psychological barriers that prevent a person from achieving a certain goal, performing a specific task or solving a problem (Podymova, 2012), (Shakurov, 2001), (Hirnyak & Vasylykiv, 2019).

Scientific aspects of the theory of psychological barriers are also presented in the psychoanalytic studies by S. Freud and his followers (Freud, 1955), in C. Roger's humanistic concept, (Rogers, 1951), in A. Maslov's theory of self-actualization (Maslow, 1997). These scientists link strategies to overcome barriers with tactics, technologies and ways of behaving in unusual situations.

The problem with overcoming anti-innovation barriers in the activities of lecturers is considered in the structure of their innovation activity. It can be manifested in pedagogues depending on their professional qualities and needs.

The results of the analysis of scientific resources showed that scientists consider innovation activity as an interdisciplinary category taking into account psychological and pedagogical, cultural, social and economic factors. It depends on the innovative potential of the individual, which scientists interpret as a set of qualities and abilities that ensure the psychological readiness of the individual to generate new forms of activity.

Among scientists there is no unity in defining the essence of innovation potential. O. Mikhailova defines it as an integral person's quality consisting of interconnected components: creativity, intelligence, activity (Mikhailova, 2012).

In his turn, A. Kravchuk identifies the following personal qualities of human innovation potential: creative activity, sociability, ability to overcome difficulties, resistance to stress, ability to take risks, ability to reflect and introspect, developed intuition (Kravchuk, 2018).

The analysis of different positions of scientists who studied innovation and its components allowed us to conclude that an important condition for the implementation of such activities is the presence of an innovative environment in higher educational institutions. It is the environment that determines how teachers will perceive innovations, whether or not they

oppose its introduction into the educational process.

In pedagogical research, this resistance is presented in the definition of "innovation barriers" and has been consistently studied in a number of works of theoretical and practical nature.

As mentioned above, scientists have analyzed the theoretical foundations of the concept of "innovation barriers", identified their qualitative characteristics, and presented numerous classifications.

In the reference literature, the term "barrier" (from the French. *barriere*) is interpreted as - an obstacle that must be overcome.

In our study, we also consider this phenomenon as an obstacle that leads to resistance to innovation in the educational process of higher education. We believe that the main reasons for this phenomenon are the lack of perception of the need to change permanent rules and regulations, which causes uncertainty, confusion, a sense of loss and, as a consequence – the lack of positive expectations from innovation.

Scientist O. Dysa rightly points out: "People are the bearers of resistance, as well as the bearers of changes. As a rule, people are not afraid of changes themselves, but to be changed. The process of introducing changes is difficult from a psychological point of view, as it requires additional intellectual, emotional, physical effort on the part of employees. This often becomes a prerequisite for nervous overload, the emergence of stressful situations that adversely affect the well-being and efficiency of staff" (Dysa, 2020, p.52).

According to many researchers, a positive attitude to innovation is influenced by factors, including the following: sensitivity to contradictions and new experiences, risk appetite, creativity, openness of experience and others. (Grewal, Mehta & Kardes, 2000); (Robinson, Marshall & Stamps, 2005).

Let's consider the positions of some scientists on the classification of innovation barriers, which will allow us to understand their nature and identify ways to overcome them.

We consider I. Dychkivska opinion very important, who divides anti-innovation barriers into external and internal. The scientist believes that "external barriers include:

- social barriers – (incompatibility of the new with existing experience and values accepted in society; stereotypes of thinking of the pedagogical community);
- organizational barriers (opposition of the governing bodies of education to the implementation of innovations; lack of coordination centers for the development and implementation of pedagogical innovations);
- methodological barriers (lack of methodological support for innovation, lack of awareness in the field of pedagogical innovation);
- material and technical barriers (teachers' workload, living conditions, salary level)" (Dychkivska, 2004, p. 256).

Among the internal barriers, I. Dychkivska refers to psychological (personal), which, according to her interpretation, hide deep personal and professional problems of the individual.

According to the scientist, the anti-innovation barriers include the following: "inclination to conformism (the desire to be like other people, not to differ from them in their judgments and actions); fear of being a "black sheep", to seem incomprehensible and ridiculous in their judgments; fear of appearing too extravagant in their rejection and criticism of their thoughts", etc. (Dychkivska, 2004).

Whereas A. Hirnyak & O. Vasykiv, who reveal the essential content of these barriers, critically combine them into "four groups:

- 1) barriers caused by personal and professional characteristics of the teacher;
- 2) barriers caused by the psychological and physical characteristics of the student;
- 3) barriers determined by the specifics of the subject of interaction (educational content);
- 4) barriers caused by adverse factors of the material or social environment in which educational interaction takes place" (Hirnyak & Vasykiv, 2019, p.79).

Some scholars view barriers as psychological difficulties or so-called stressful situations in the teacher's professional activities. They offer the following classification:

- short-term stressful situations;
- long-term stressful situations;
- stressful situations with elements of uncertainty;
- stressful situations that require readiness for extreme action;

- situations of suddenness and lack of time;
- stressful situations of the dominant state;
- critical situations (Podymova, 2012).

The analysis of classifications of professional difficulties in the teachers' activity formed the basis of the experimental technique, which was directed on:

- a) determining their readiness for innovation;
- b) development of mechanisms for overcoming difficulties on the way to professional growth.

The results of the analysis of scientific literature showed that scientists have developed mechanisms to overcome psychological and pedagogical barriers. They consider them one of the ways to improve the professional activity of lecturers of higher educational institutions and highlight the following mechanisms for overcoming psychological difficulties: willingness to reinvent their actions, overcoming personal resistance based on the rejection of traditional standards of behavior; mastering new patterns of behavior and developing alternative activities.

Having researched the reasons for the innovative resistance of lecturers, we have identified ways to eliminate them. These include: education and counseling; participation in the development of plans for the implementation of pedagogical innovations; timely help and support; negotiations and agreements on joint activities; giving priority to those who resist; motivation, persuasion; setting own examples of creative activity. Moreover, pedagogical research offers the following preventive measures against resisting innovation:

- focus of the team on innovation as an important value;
- popularization of productive innovative technologies;
- acquaintance with new scientific and practical experience;
- involvement of teachers in the development of new projects and programs of educational development;
- stimulating innovative self-education and creative growth, etc. (Duplychuk, 2013).

We believe that it is possible to implement methods of reducing resistance through the following actions:

- 1) education and information, when the team is involved to discuss openly ideas, programs,

activities, the purpose of which - to convince employees of the need for change;

- 2) employees' engagement in decision-making in order to change their attitude to innovation;
- 3) the main role in the development of new activities should be granted to employees who oppose innovation;
- 4) creation of appropriate conditions by management (tangible and intangible) to access a new problem easily;
- 5) involvement in innovations on the basis of material incentives;
- 6) clear planning of the introduction of new activities in order to achieve the desired impact on employees;
- 7) forcing workers to participate in innovations at the risk of dismissal, career advancement, salary raise, etc.

Regarding the latter method of involvement in innovation, we can say that it is associated with certain risks in social terms because its application "imposes" the introduction of innovation on the basis of forceful pressure on employees by the management. We agree with the teachers-practitioners who expressed their opinions during the survey that this is the worst method that can be applied to problem-solving.

We believe that the positive methods in the context of the problem are the ones that enhance the activities of researchers on the basis of friendly recommendations, taking into account the psychological characteristics of team members.

These include:

First, it is to provide complete and up-to-date information about innovation and ways to implement it in the educational process of higher education. The timeliness of information, the phasing of its provision, the simplicity, accessibility and variety of means of its dissemination should play an important role here.

Second, it is to create conditions for a positive reaction of teachers towards information about reforms, and their involvement in active implementation of innovative activities. This method should be based on the work of engaging informal leaders, leading professionals and others who may be involved in the decision-making process.

Third, it is a material individual stimulation and elimination of negative factors that inhibit the process of introducing something new.

Fourth, it is the adoption of strategic changes not through cataclysms, but gradual insignificant changes over a long period of time with the adoption of compromise and joint decisions.

Fifth, it is the introduction of a method of comparison with the most successful competing institutions.

And, finally, we can predict the possibility of postponing the introduction of innovation for some time, if the resistance is quite strong.

In this context, we want to define the importance of such an aspect in the activities of teachers and professors of higher education as "initiative", the detection of which, according to Tamiko Kondo (2020), promotes democratic relations in the team, develops their communication. We support this position and believe that the democratization of the educational process will contribute to the professional development of teachers and stimulate them to innovate.

Thus, the results of the analysis of scientific sources on the problem of overcoming innovation barriers allowed us to systematize them into 5 groups and to form a typology of methods for overcoming them. These include:

- methods based on self-regulation of subjects of professional activity;
- methods focused on personal development;
- methods aimed at forming the behavioral strategy of the subjects of innovation;
- methods focused on the formation of new patterns of behavior;
- organizational methods that can be provided by the management to reduce resistance to innovation.

### Methodology

The following research methods were used to solve the problem:

- theoretical: research of scientific literature to determine the qualitative characteristics of innovation barriers as a psychological and pedagogical phenomenon;
- diagnostic-empirical: questionnaires, surveys, interviews, observations to determine the attitude of lecturers to the introduction of innovative pedagogy in the teaching of future students of Bachelor's Degree;
- pedagogical experiment: to identify, disclose the content and ways to prevent innovation barriers in the professional

activities of teachers of higher education in Ukraine.

The methodological basis of the study accounted for the following approaches to the process of implementing innovative activities in higher education:

- activity approach, which was based on the use of a set of material and spiritual resources of the participants of the educational process. It determined the integrity and interconnectedness of the components of the professional activities of pedagogues.
- culturological approach, the implementation of which took place on the basis of the introduction of the principle of cultural conformity. This approach involved the combination and interdependence of special, cultural and psychological-pedagogical factors that determined the patterns of development of the student's personality.
- axiological approach, the introduction of which allowed us to determine the value principles of the implementation of innovative activities: moral, aesthetic, cognitive. The main feature of the approach was: focus on self-development and self-realization of the future teacher.

A personally oriented approach was important in the aspect of introduction of innovative learning. Its expediency was that it contributed to the provision of a conflict-free and safe environment, which was based on the principles of parity, taking into account the individual characteristics of future teachers.

The feasibility of implementing these approaches has already been tested and published in the scientific paper (Maksymenko, Bei, Khimchuk & Vovchok, 2020).

In addition, our experimental methodology for overcoming innovation barriers was based on theoretical concepts that reflected:

- 1) ideas about innovations as a complex psychological and pedagogical phenomenon;
- 2) the study of the essence and structure of innovation;
- 3) discussions on the psychological aspects of motivation;
- 4) theoretical and practical aspects of the teacher's readiness for pedagogical innovation;
- 5) questions regarding innovative culture, etc.

We see the practical implementation of this problem in the fact that the results of experimental work on the prevention of resistance to innovation will develop a strategy and tactics for introducing new activities in the educational process of higher educational institutions.

We shall present its diagnostic aspect, which involved studying the attitude to pedagogical innovation by the following subjects of educational activity:

- a) students – future teachers of various fields of training;
- b) university lecturers in Ukraine who carry out the process of students' professional training;
- c) teachers of general school education (work experience not less than 5 years).

At the first stage of the experimental work, a survey of students (Bachelor's Degree) was conducted.

The main task of the survey was to find out how future teachers assess the importance and necessity of innovative learning in higher education, whether they are familiar with the technology of its implementation in the classroom, and diagnose the frequency of students using innovative methods during teaching practice.

The survey covered the students of pedagogical faculties and foreign language faculties of such institutions of higher education of Ukraine as: Vasyl Stefanyk Precarpathian National University, Mykhailo Kotsubynskyi Vinnytsia State Pedagogical University, Drahomanov National Pedagogical University.

A total of 250 people were surveyed.

The questionnaire included both closed-ended questions, which allowed us to obtain information in a concise form, and open-ended ones aimed at determining the personal position of future teachers to use innovative learning in professional activities. In addition, it was important for us to find out whether the subjects of the educational process experience difficulties in implementing innovations, whether they recognize the existence of resistance to pedagogical innovation and whether they are ready to overcome these difficulties. All these factors, in our opinion, determine the structure of the teacher's readiness for innovative professional activity.

## Discussion and Results

It is crucial for our research to analyse such definition as «readiness for professional innovation».

We designed the questionnaires taking into account some theoretical research of such a concept as «readiness for professional innovation». This concept is interpreted ambiguously in the scientific literature.

According to O. Marynovska, "this is an integrated qualitative characteristic of the individual, the essential feature of which is the level of professional development, which is the result of purposeful preparation for the introduction of pedagogical technologies" (Marynovska, 2009). Instead, N. Volkova proposes to consider this phenomenon as the activation of all mental and physiological systems of the individual, which provide a positive performance of professional functions (Volkova, 2013, p. 86). Whereas O. Duplychuk explains the readiness to implement innovative learning not only as a result of professional and pedagogical training of future teachers, but also as the purpose of this training, the initial and main condition for its effective implementation (Duplychuk, 2013).

Thus, the results of the analysis of different approaches to the definition of "readiness" in domestic and foreign literature allowed us to define our own interpretation of this phenomenon and use it in the following meaning: it is a complex dynamic formation that encompasses a multifaceted system of qualities and characteristics that are shown in:

- the presence of value-motivational attitude to innovative learning;
- the possession of professionally important linguistic, methodological and psychological-pedagogical knowledge;
- the formation of relevant personal qualities important for the successful implementation of innovative activities and pedagogical reflection.

Taking into account the scientific theories of pedagogical science, the main criteria of the teacher's readiness for innovation are defined as follows:

- awareness of the need for innovation;
- readiness for creative work;
- confidence that the innovation will bring a positive result;

- consistency of personal goals with future innovation activities;
- readiness to overcome creative failures;
- readiness to implement technologies;
- positive assessment of their previous experience in innovation;
- ability to professional reflection (Aleksyuk, 1998).

The results of the survey allowed us to claim that:

- 39.09% of the students showed a positive attitude to innovation in general secondary education: they are convinced of the effectiveness of innovation implementation in the educational process of general secondary schools;

- 28.63% of the respondents said that the use of innovative methods will enrich the learning process in school, however, as far as they can tell, conducting lessons using these methods is too difficult and time-consuming;
- 22.46% of the students showed a neutral attitude to the use of innovative learning;
- a significant part of the respondents (9.82%) showed a negative attitude to the introduction of innovative learning because they believe that there are enough textbooks, guidelines, etc. to perform their professional activities.

The results of the survey are visualized in the diagram (Fig.1).

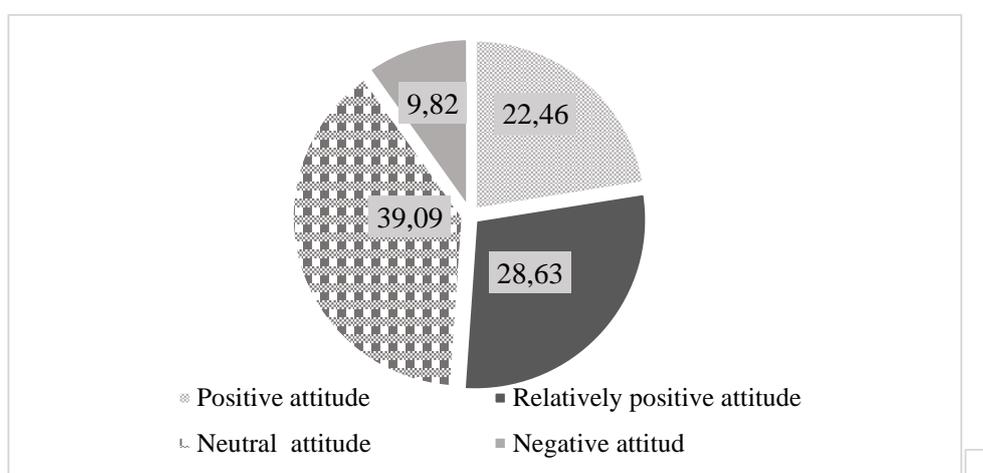


Fig.1. Indicators of students' attitude to innovative learning in the future professional activity (in %)

In addition to surveying the students, the attitude of the lecturers of the above mentioned universities to innovation was determined. It was considered that the competent opinion of the mentioned subjects of the experimental research will allow us to reveal shortcomings in the content of professional training of future teachers to the specified kind of activity, will help to define innovative barriers in their professional work.

The survey was conducted using the Google survey method and aimed to discover whether lecturers of universities are familiar with innovative learning as a pedagogical phenomenon and whether they use it in the process of professional training of future teachers.

We demonstrate some of the results of the Google survey of pedagogues in different regions of Ukraine.

The results of the survey showed that 68.6% of the respondents are familiar with the features of innovative technologies, 31.4% – are partially interested in them.

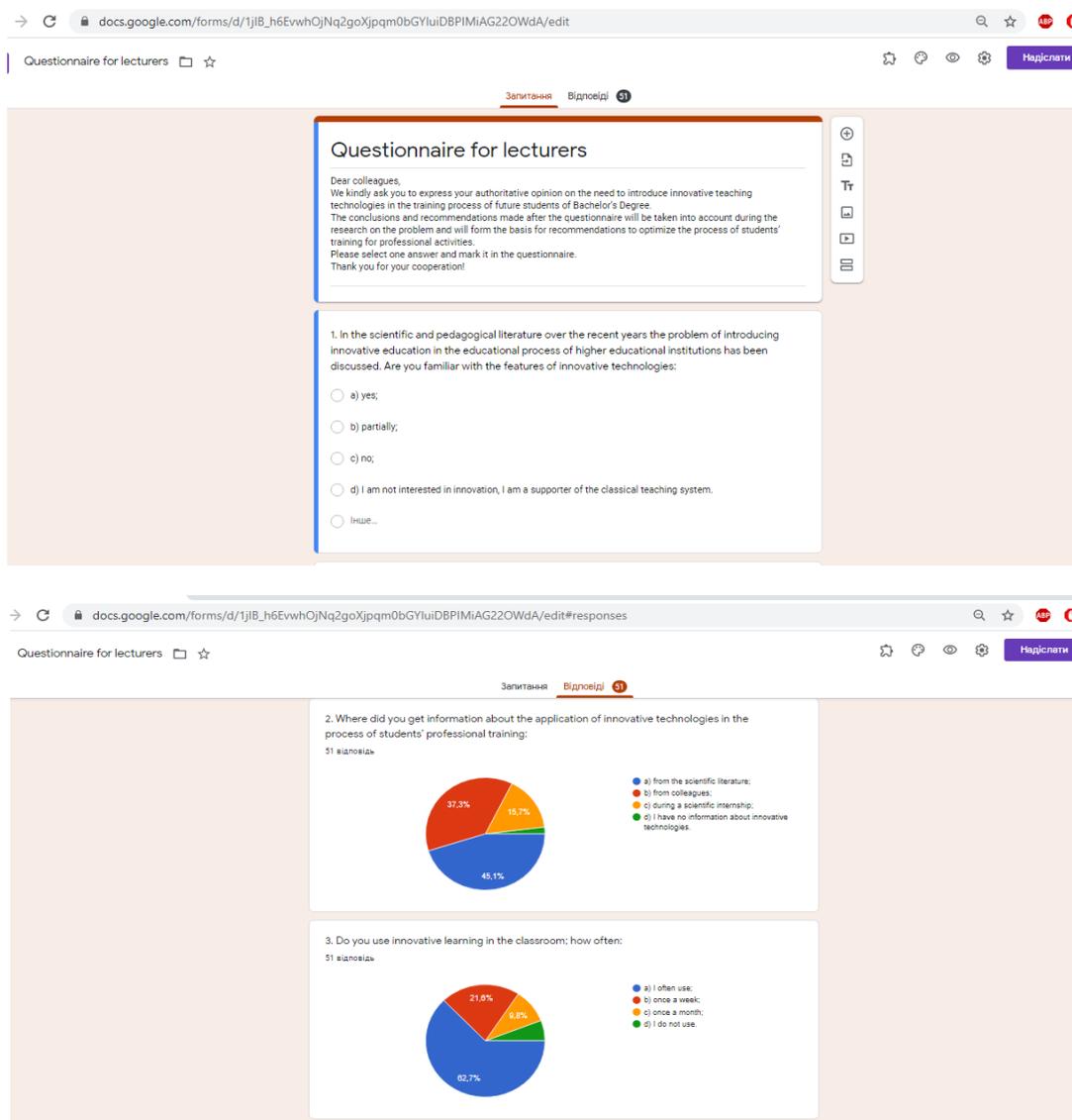
To answer the question on the source of information to use innovative technologies in the process of professional training of students, 45.1% of the respondents said that they got it from the scientific literature; 37.3% – from colleagues; 15.7% – got familiar with the features of these technologies during the scientific internship and 2% of the respondents admitted that they have no information about innovative learning and its application in the educational process of higher education.

Among the lectures, who apply innovations while teaching students, the answers were distributed as follows: 62.7% often uses innovative teaching; 21.6% – performs this work once a week; 9.8% applies innovative training once a month and 5.9% of the respondents said

that they do not use these technologies in lectures and practical classes.

It was important for us to find out what difficulties, in the lecturers' opinion, hinder the introduction of innovative learning. 13.7% answered that they feel the lack of guidelines for the use of innovative technologies; 64.7% noted

that classrooms are not well-stocked with modern technical equipment that promotes innovation; 17.6% felt the difficulty of reorienting the learning process from traditional to innovative activities and 3.9% of the respondents admitted that they are loaded with other activities (Fig.2).



**Fig.2.** Questionnaire for university lectures in different regions of Ukraine (results in %)

The study of the difficulties that the students of pedagogical specialties face during the introduction of innovative learning deserved special attention. It was important for us that they all showed interest in this activity, but they also claimed that when working in "groups" they are not able to freely enter the project teams and as a result leave them (16%); instead, 32% of the lectures acknowledged their unwillingness to

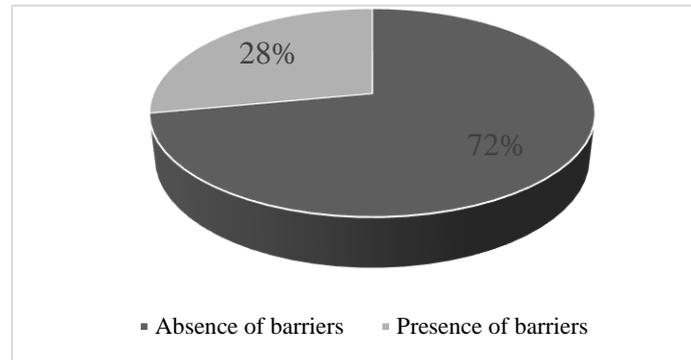
abandon formal and generally accepted standards; 36% of the respondents said that they lack proper initiative and independence and 16% of the respondents stated that they do not have the skills to make and implement non-standard decisions. We also found out in which protective statements interpersonal barriers to the introduction of innovative activities in the

process of training future teachers can be manifested.

The following results were obtained: 17.6% of the respondents said that: "We already use them"; 41.3% of the lectures claimed: "It will not work for us"; 29.4% of the respondents believe: "This does not solve our main problems" and 9.8% say: "There are other important proposals".

It is quite alarming that 28% of the lecturers out of the total number of the respondents acknowledged that they possess anti-innovation barriers.

Visualization of quantitative indicators of the presence of innovation barriers in the lecturers is presented in the diagram (Fig.3).



**Fig.3.** Indicators of the presence of anti-innovation barriers in lecturers of Ukrainian universities (in %)

Thus, the results of the survey, research of scientific literature on this issue allowed us to determine the attitude of lecturers to the problem of introducing innovative technologies into the students' training and suggest that by eliminating the causes of innovative resistance of teachers, involving them in creative work their resourceful and innovative activity can be enhanced.

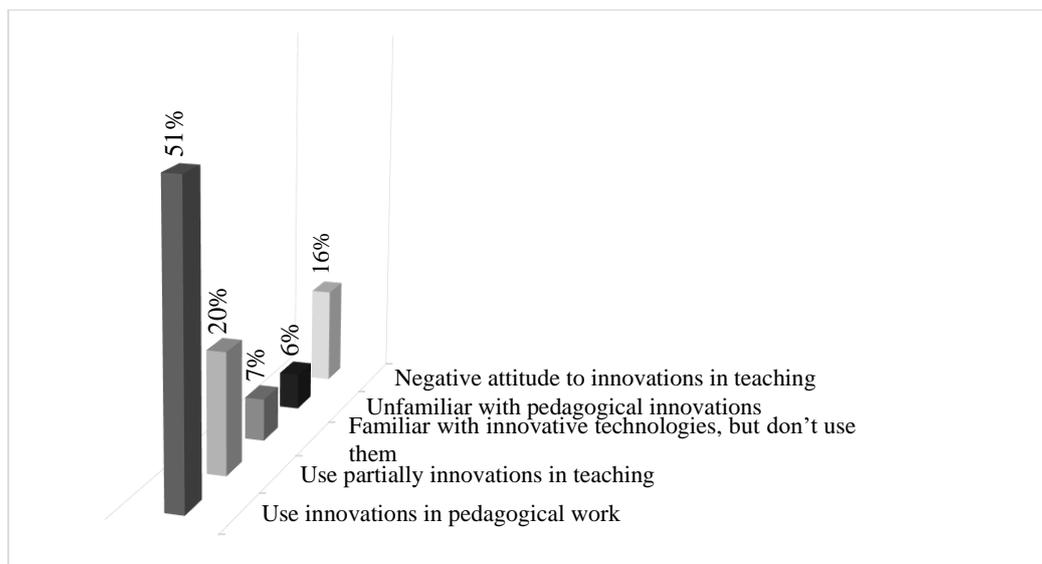
The analysis of their answers to the questions, generalization and systematization of the obtained material was the basis for our development of methodological materials for lecturers who are aimed at overcoming innovation barriers, which, as evidenced by the results of the experiment, still occur in pedagogues.

In addition to the lectures' opinion, it was important to determine how teachers of general secondary education of different qualifications assess the effectiveness of training future teachers in the higher educational system of Ukraine and determine its focus on the introduction of innovative educational technologies.

The survey covered 60 teachers from different regions of Ukraine, who were asked to answer the questionnaire to determine their attitude to the problem of innovative learning.

The results of the survey showed that teachers are mostly familiar with the essence of innovative teaching methods and apply them in lessons. 51% of the respondents gave a positive answer to this question; 20% of the teachers claimed that they are familiar with this technique, but use it partly in lessons; 7% of the respondents answered that they had heard about the effectiveness of this students' training, but were not familiar with the method of its application; a significant number of the teachers (6%) admitted that they were not familiar with the innovation technology. We note that 16% of the respondents from the total number of the teachers who took part in the survey showed a negative attitude towards innovative learning.

The teachers' responses revealed such an important component in their work as the need to control students' behavior in the classroom (Fig.4).



**Fig. 4.** Indicators of teachers' attitude to innovative learning in professional activity (in %)

The urgency of maintaining a positive atmosphere in the classroom is identified in a number of scientific studies. For example, R. Paramita, A. Anderson & U. Sharma highlight the importance of professional programs aimed at showing teachers certain strategies to regulate students' behavior. They are based on a friendly attitude to students, praise of their actions and deeds, activation of the subject-subject interaction (Paramita, Anderson & Sharma, 2020).

We believe that the leading role in this process should belong to innovative activities, which are based on taking into account the individual characteristics of students and the organization of parity interaction between the participants in the educational process. Researchers such as P. White, J. Raphael, S. Hannigan & J. Cripps Clark in scientific papers on this issue argue about the feasibility of cooperation as an important component of the practical activities of higher education (White, Raphael, Hannigan & Cripps Clark, 2020). We agree with the statement of these scientists, who emphasize the feasibility of research projects in order to establish cooperation between pedagogues.

It should be noted that these problems were the subject of our separate research, in which we look at the feasibility of pedagogical interaction in the process of preparing future teachers for innovative project activities in general secondary education. We conducted a theoretical analysis of the subject-subject interaction in the system of relations "teacher-student"; we substantiated the universal principles of construction and conducting of parity dialogue by the participants of educational process of higher school. In the

process of experimental work we proved the importance of parity dialogue as the one that ensures equality of psychological positions, mutual humanistic relations, activity of the teacher and students, readiness of the communication subjects to accept the interlocutor. The results of the study on this problem were tested and published (Bei, 2018).

The importance of parity interaction is reflected in the study of S. Tolochko. The scientist defines its basic principles: tolerance and respect for students, development of personal educational trajectories, "the use of various means of representation of educational, cognitive or scientific information and pedagogical methods, as well as their systematic evaluation and adjustment; formation of independence, autonomy in combination with mentoring, facilitation and assistance of teachers; adherence to the principles of mutual respect in relations between teachers and students; responding to students' wishes or dissatisfaction" (Tolochko, 2020).

The survey of teachers revealed that they acknowledge the resistance to innovation. They identified the main reasons: the inability to implement new teaching methods (25%); immaturity of individual creative potential (31%); fears of criticism from colleagues who oppose innovation (15%); lack of a need for innovation (9%); low self-esteem which is manifested in anxiety, lack of confidence, rigidity (inflexibility of thinking) (14%), difficulty in maintaining discipline in the classroom (6%).

The definition of these difficulties was the basis of our experimental work to overcome them. We took into account the assertion of scientists that overcoming innovation barriers is possible if the educational process uses socio-psychological methods, in particular, individual and group psychotechnologies. The main tool to implement these methods is the "group" as a component of a powerful influence on the individual. We share this point of view because the study of the importance of the group component in innovation showed that interaction in the group promotes the development of communication skills, it increases reflection, helps to overcome anxiety, aggression, it activates positive motivation of behavior (Budnyk, Fomin, Novoselska, & Voitovych, 2020). We used this statement as basic in the process of modeling experimental methods because we believe that one of the main areas of innovation is the organization of group learning, which promotes the formation of creative skills of students, their positive motivation to innovate in future professional activities.

### Conclusions

The study of the problem of overcoming innovation barriers in order to encourage university lecturers to use innovation allowed us to draw the following conclusions:

1. Research of scientific sources on the given problem has shown that the tasks, purpose, conceptual principals of the problem of innovation implementation in higher educational establishments are formed according to modern tendencies of education modernization in Ukraine. Innovative activity of higher educational institutions as an interdisciplinary category at the present stage of development of scientific thought is the subject of research in economic, pedagogical, sociological and cultural studies. Accordingly, the innovative activity of pedagogues as a complex multifactorial system should be studied due to interdisciplinary approaches.
2. The effectiveness of innovative activities of lecturers depends on a number of factors, both objective and subjective, and requires purposeful management of these activities (Nikolaesku, Budnyk, Bondar, Tepla, & Berezovska, 2021). It should be aimed not only at the assimilation and dissemination of innovations, but also at creating favorable conditions for their implementation.
3. Pedagogical research on the problem of involving teachers in innovative activities has shown the need to create educational and methodological support for the process of overcoming resistance to pedagogical innovations.
4. The analysis of empirical research has allowed us to conclude that innovations in the educational process of higher educational institutions can cause different reactions: from the active perception of innovation to sustainable resistance to change. The introduction of something new in the educational process is always associated with certain difficulties because innovation is not only an innovation but also the ability to new perceptions, to redefine existing theories, enduring truths, rules and norms of behavior. Therefore, innovation processes require the involvement of such qualified teachers who have certain psychological abilities to positive perception and implementation of innovative changes.
5. The results of the study allowed us to identify the factors that contribute to a positive perception of change by pedagogues. Psychological features that should be inherent in teachers with a positive response to change are creativity, risk for success, future orientation, ingenuity, confidence, expressiveness.
6. On the basis of the obtained results the psychological features of lecturers who are inclined to resist changes were determined. This is rigidity, excessive pragmatism, conservative views, and uncertainty.
7. The ways to overcome innovative barriers in the professional activity of higher school teachers include: quality education and competent counseling of the subjects of the educational process; involvement of teachers who do not support innovations in their development and implementation; concluding agreements on joint innovation activities; demonstration of examples of application of pedagogical innovation with the analysis of efficiency of results of work (Tsependa, & Budnyk, 2021).
8. We consider such effective methods of innovative activity as:
  - friendly recommendations to members of the pedagogical community on the positive impact of innovations on the educational process of higher education institutions, taking into account their personal characteristics;
  - timely step-by-step informing teachers about pedagogical innovations with the participation of informal leaders of this process;

- individual material stimulation of participants of innovative activity, their involvement in dissemination of work experience among teachers who oppose the new;
- studying the experience of competitive institutions and comparing the results of their activities with the real success of the teaching staff of higher education institutions.

Analysis and consideration of these features and other factors were the basis of our experimental methodology which is aimed at overcoming resistance to innovation in the process of preparing students of pedagogical specialties for future professional activity.

Prospects for further study are to study innovation as a personal characteristic. Our next scientific research will be dedicated to psychological components of innovative behavior, its impact on the effectiveness of professional activities, the introduction of the developed experimental methodology in the educational process of higher educational institutions of Ukraine.

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