

# THE WORLD SPACE OF HIGHER EDUCATION: TRENDS IN INTERNATIONALIZATION AND DEVELOPMENT

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The collective monograph "The World Space of Higher Education: Trends in Internationalization and Development" presents five sections developed based on the results of the author's research. Scientific and theoretical principles of internationalization of national higher education systems are revealed; modern models of university education are characterized; the Ukrainian historical practices of university autonomy in the context of modern interpretation of the principle of autonomy in university management are analyzed; the unity of education and science as an important condition for the organization of professional and pedagogical training of future specialists is substantiated; Innovative didactic technologies adapted to the educational environment of the university are offered. For scientific and pedagogical workers of higher education institutions, practical workers of the educational branch, scientists, students.

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## **5.2. INTRODUCTION OF INTERACTIVE LEARNING TECHNOLOGIES IN THE EDUCATIONAL PROCESS OF HIGHER EDUCATION**

The inclusion of the future specialist in the broad international interaction of the European educational space necessitates the use of modern interactive learning technologies in the training of future professionals.

Reformation of the higher education system in Ukraine requires innovative changes in the priorities of educational policy, improvement of its content, information and technological support of the educational process. So the task to determine such methods of interaction between teachers and future teachers of preschool education institutions in order to stimulate their successful professional development arises.

One of the tasks of modernization of higher pedagogical education is the formation of students' information and communication competence. The state documents of Ukraine – the laws "On Education", "On Higher Education", "On the National Strategy for the Development of Education in Ukraine until 2021" – emphasize the importance of implementing the outlined task.

The internationalization of higher pedagogical education, and hence the development of transnational education motivate the deepening trend of diversification of goals and profiles of the master's degree, their coordination in the direction of developing curricula aimed at obtaining joint degrees. The National Strategy for Education Development in Ukraine for 2012–2021 envisages deepening international cooperation in the field of education, designed to ensure the integration of the national education system into the international educational space, which includes expanding domestic educational institutions, teachers, scientists, students' participation in international projects and programs, organizations and communities [8; 12].

As the analysis of the state of the educational process shows, students do not always show a desire to search and critically analyze a significant amount of important information, highlighting the key principles for future professional activity. Therefore, the task is to identify such methods of cooperation of freelance teachers with future teachers to stimulate them to successful professional development.

The idea of intensifying learning was expressed by scientists throughout the period of formation and development of pedagogy, before it was formed into an independent scientific discipline. The founders of the ideas of activation include Ya. A. Comenius, J.-J. Rousseau, J.G. Pestalozzi, G. Hegel, A. Distverg, D. Dewey, K. D Ushinsky and others.

The word «interactive» (from the English «interact», where «inter» – mutual, «act» – to act) means the ability to interact or be in a mode of conversation, dialogue with something (such as a computer) or someone (man). In general, interactive methods can be considered as a more modern form of active teaching and learning methods. In contrast to active methods, interactive methods are focused on the wider interaction of students not only with the teacher, but also with each other, as well as on the dominance of student activity in the learning process. Interactive learning has very specific and predictable goals, one of which is the creation of comfortable learning conditions in which the learner feels his success, intellectual independence, which makes the learning process productive.

The technological determinant of modern society makes it necessary to rethink the basic guidelines of higher education: the education system should provide training for such professionals who could navigate in the changing conditions of modern society. The need to move from subject-oriented to personality-oriented educational process based on the principles of student-oriented approach and academic freedom and mobility of participants in the educational process becomes obvious, which requires a radical revision and approaches to the use of modern technologies in training for the New Ukrainian School. Based on the outlined priorities, modern pedagogical science continues to find ways to effectively implement independent work, to improve the quality and effectiveness of psychological and pedagogical training of future professionals.

The position of modern Ukrainian pedagogy on understanding the concepts of «technology», «education technology», «learning technology», «technology of psychological and pedagogical interaction», «educational technology», «pedagogical technology» is set out in the dictionary «Professional Education» [19].

Technology (from gr. – art, skill, skill and – doctrine, science, word, concept, as well as regularity, relationship, order) – a conscious technique of human activity – individual or collective in the productive and non-productive spheres, containing three main relatively independent elements and stages of implementation:

- 1) a set of knowledge about effective, optimal and rational ways and means of achieving the goal, the implementation of the production process;
- 2) activities with the use of these and other types of knowledge to solve certain practical problems;
- 3) the technological processes themselves, ie objectively-objectively implemented, on a rational basis built methods and means of transformation of matter, energy, information, as well as methods of organization of production and management [19, p. 341].



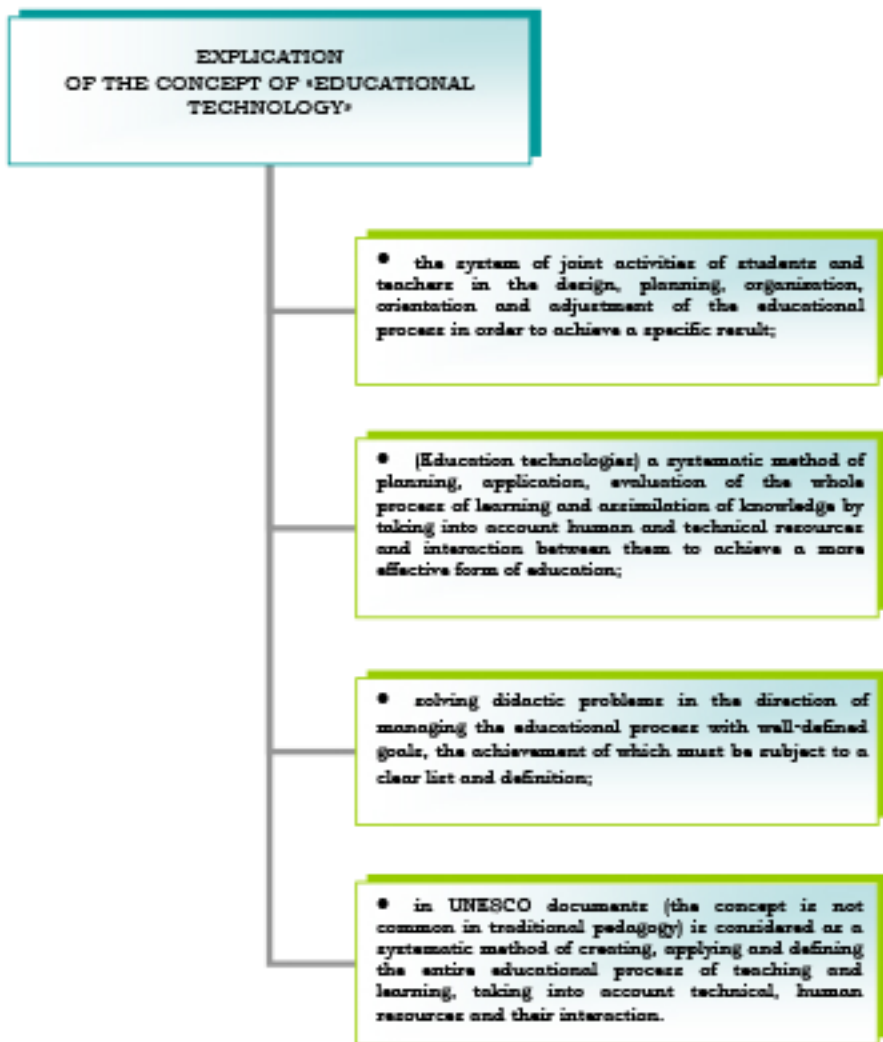
According to N. Smirnova, educational technologies are a set of consistent, algorithmic steps for the organization of the cognitive process. T. Shamova and T. Davydenko interpret educational technology as a process system of joint activities of students and teachers in the design (planning), organization, orientation and adjustment of the educational process in order to achieve a specific result while providing comfortable conditions for participants. A. Pligin believes that "educational technology" – a section of modern didactics, which considers the normative and procedural side of the transfer of accumulated knowledge within the organization of the educational process [16]. Thus, it is possible to form the idea of using technology – the guarantee of obtaining the result. A certain scheme is built: goal setting – the choice of means and methods – determining the rules of their use – getting results.

Based on the results of vocabulary analysis and logical-system analysis of scientific sources, we provide a definition of «educational technology» [18, p. 298] (see Fig. 1.).

According to V. Palamarchuk, in the general sense of the word "technology" is the development of a certain idea. There is an extremely broad understanding of this concept – as a bridge between two cultures; between the humanities and «accurate» knowledge. According to L. Rakitov, technology is a set of different operations and skills that are implemented in a fixed sequence in the appropriate space-time intervals and on the basis of a well-defined technique to achieve selected goals. Education technology is a systematic method of creating, applying and defining the whole process of learning and mastering knowledge, taking into account technical and human resources and their interaction to optimize forms of education [19, p. 342].

How do the concepts of «technology» and «methodology» in modern pedagogical science? According to S. Goncharenko, the term «technology», in contrast to the term «methodology», reflects not the usual transfer of information, but the learning process, which is essential for the characterization of modern trends in pedagogical sciences (K., 2000). In the interpretation given in the Pedagogical Dictionary (K., 2001), ed. M. Yarmachenko, pedagogical technology – a set of tools and methods of reproduction of theoretically sound processes of teaching and education, which allow to successfully implement the educational goals.

Pedagogical technology involves appropriate scientific design, in which these goals are set quite clearly and the possibility of objective step-by-step measurements and final evaluation of the achieved results is preserved. According to A. Kushnir (2004), the technology differs from the methods by its reproducibility, stability of results, lack of many «ifs». The technology is designed based on a given result. This, in her opinion, is the main difference between methodology and technology.



**Fig. 1. Explication of the concept of «educational technology»**

According to A. Bogush, in a broad sense, technology is a set of knowledge and information about the sequence of individual operations in the production process. The traditions of using this term are borrowed by domestic pedagogy from the West in a slightly different, metaphorical sense, which reflected the technologicalization of not only the industrial but also the humanities, knowledge. The essence of Western learning technology was to, based on constant feedback, to

ensure the achievement of a clearly defined goal, which provided primarily its terminological definition [2, p. 10]. We believe, following A. Bogush, that the concept of teaching methods (teaching) is more voluminous than "technology", because the teaching method (any educational component) involves the use of various innovative technologies.

The inclusion of the future specialist in the broad international interaction of the European educational space necessitates the use of modern technologies for the organization of independent work of future professionals. After all, for the sake of mobility and competitiveness, a modern specialist must be ready for constant independent activity, for the development of new technologies, to have the appropriate level of professional competencies needed to identify personal business activity, intellectual qualities (competence, initiative, creativity, self-regulation, uniqueness of mind), constant search and development of new types of pedagogical services in the field of education. It is an indisputable fact that the most significant asset of a graduate of a higher education institution with a high culture level of independent work is his ability to create life as a social phenomenon. The creative realization by a specialist of his life, filled with humanistic personal meaning, is connected with the products of his work as a specialist, first of all by certain technologies aimed at self-improvement through self-education and self-education and modernization of the educational field.

Determinant in the technological approach to the organization of independent work of students in the modernization of higher education should be the need to adhere to the principle of unity of educational, developmental and pedagogical influence.

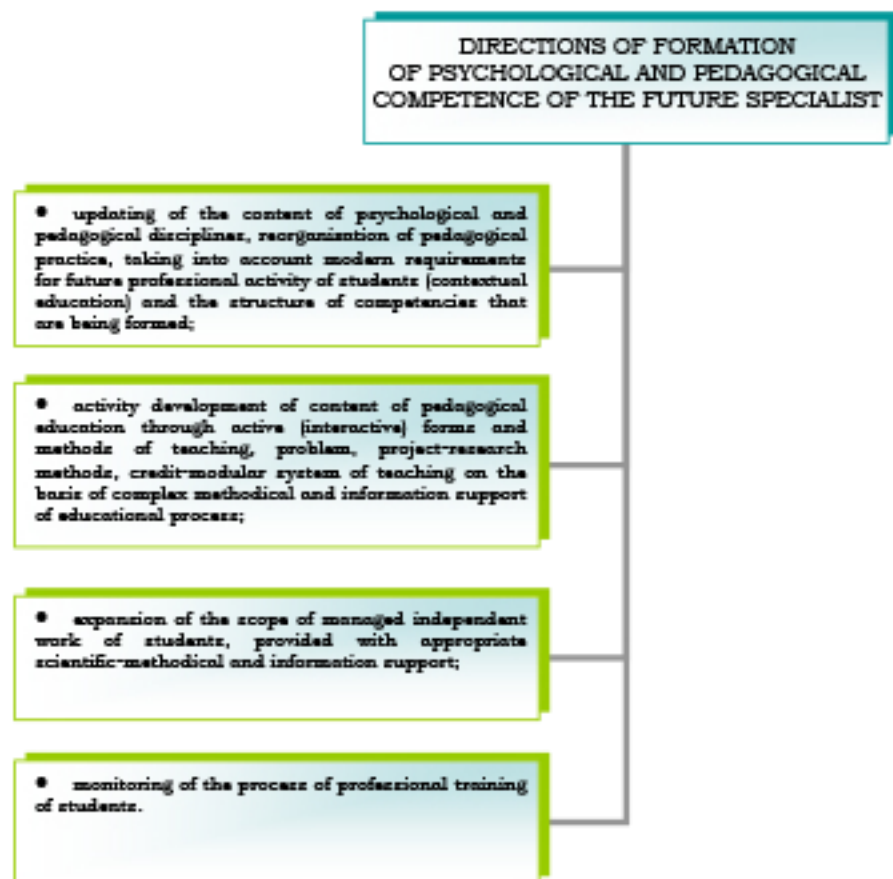
Teaching a student to work independently is a complex and multifaceted process. It requires creative search, various forms of pedagogical influence, development of various methodical materials for each discipline, use of modern technical means of training, development of activating algorithms for independent work. Based on analysis of theoretical and methodological principles of the studied phenomenon, our own pedagogical experience, we believe that only a purposeful integrative approach to the organization of independent work of teachers and students, in accordance with the enduring educational and professional training program for future professionals in teaching, research, will enable professional and personal growth.

The interaction of professors and students creates a single space of scientific research, where the future specialist will not only have necessary knowledge, but also will develop professional and pedagogical competencies. Competence approach in organization of independent work of high school students involves the subjectivity of teacher-student relations, credit-modular system of educational process, block-modular construction of educational and methodical complexes, their equipment with diagnostic materials, implementation of research technologies, master's priority in multilevel training with the asynchrony of educational process and development of academic mobility of students.



One of the most important components of the professionalism of a graduate of a higher educational institution is considered to be professional training, during which the formation of psychological and pedagogical competence takes place. It promotes the development of socio-personal competencies and ensures the effectiveness of socio-professional and personal tasks.

Promising areas of formation of psychological and pedagogical competence of the future specialist are shown in Fig. 2.



**Fig. 2. Directions of formation of psychological and pedagogical competence of the future specialist**

Necessary requirement for organization of professional training is its implementation in the context of semantic and technological integration of socio-humanitarian, general professional, subject areas and extracurricular socially

significant activities of students. Thus, analysis and comprehension of the mastered phenomena, processes, values are considered as means of their self-determination and self-improvement. Active, dialogical, research methods of teaching and education are means of independent development of reflective, organizational-communicative, project activities, and therefore basis for development of socio-professional competence of graduates.

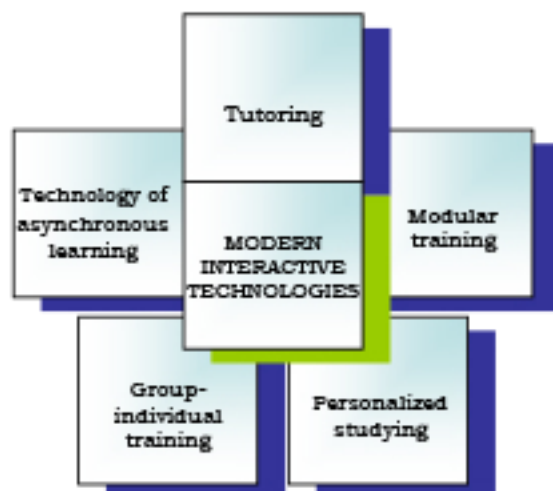
Among general requirements for *pedagogical technology* (A. Faktorovych):

- *conceptuality* (scientific and pedagogical justification – the general scheme and its preliminary interpretation by a teacher, taking into account conditions of real educational process, represented by diversity of pedagogical situations);
- *anthropocentrism* (ensuring continuous development and self-development of student's personality);
- *situationality* (preservation of space for authorship, creativity of each teacher and student, which allows to transform ideal scheme into a living pedagogical situation);
- *contextuality* (integration into real educational process, focus on future professional activity).

This determines prospects of number of an active/interactive pedagogical technologies, including a set of forms, methods, techniques, tools aimed at achievement of the planned result. Among them: tutoring, modular, personalized, team-individual, etc. (see Fig. 3.).

In further disclosure of the content of innovative pedagogical technologies we will rely on well-known definitions of the form of organization of education as an external manifestation of coordinated activities of teacher and student, carried out in the prescribed manner, with a certain frequency in space and time tasks of training and education.

*Tutoring* involves academic support of an individual educational trajectory of a student by a teacher, – more experienced bearer of knowledge and experience in the classroom, distance, pair, individual or group form of work [2, p. 46-47]. A tutor should be considered primarily as a mentor. He observes success and formation of a student's personality in the process of his study. There are three different functions in the traditional structure of tutoring. Thus, the director of studies is responsible for the education of students as a whole, moral tutor – for their morality, the tutor oversees education of an individual student during the semester or academic year. Tutoring owes its historical roots to the Oxbridge model of education, with the difference that in Oxford all these functions are performed by the same person, and in Cambridge the tutor conducts practical classes and is called a supervisor. His responsibilities include to monitor success of students, their attitude to learning, formation of skills of independent work.



**Fig. 3. Introduction of modern interactive technologies in ZVO**

The expediency of introducing tutoring in Ukrainian system of training is explained by significant predominance in curricula and programs of hours allocated for independent work over classroom, which transforms the process of student education into self-education. A tutor is not just a teacher, he is a personal scientific supervisor of a student, lecturer, mentor, partner, coach, colleague, educator in one person, who promotes the development of logical thinking, learning material, takes over educational functions. The main form of tutoring is a tutorial – a practice based on extensive repetitive sequential activities of forming students' metacognitive abilities in the context of mastering disciplinary knowledge. The tutor is primarily responsible for two main roles, which sometimes intersect – the coach (coach, instructor) and colleague. In distance learning, a tutor performs pedagogical, social, managerial, technical functions and acts as a coach, leader, moderator, motivator, expert, innovator, advisor. He is entrusted with the mission of methodologist (development of tasks, project content), stimulator (awakening interest for a project, deeper penetration into work on it, overcoming difficulties), observer (forming the atmosphere of cooperation, interaction skills, cooperation), technical specialist and expert.

Introduction of the system "Tutor" (for full time, part time and full-part time students) is perspective for pedagogical education. It can be, in particular, a distance learning site. It will allow implementing didactic innovations, will create conditions for practical development of new pedagogical technologies in uninterrupted pedagogical education, and will provide organization of asynchronous training of students (S. Bochkareva, 2011; N. Demyanenko, 2018; T. Shvets, 2018).



Another type – *modular learning* – involves clear organization of self-education and group studying. A student is given an opportunity to work independently on individual program, which is provided by a specific action plan, data bank and methodological guidance. The teacher performs a wide range of functions: from informative and controlling to advisory and coordinative. The content of training is presented in the form of separate training packages. The student can independently combine a set of modules depending on his own individual plan. Among the principles of modular learning: dynamism, effectiveness and efficiency of knowledge; flexibility in organization of learning process; awareness of perspective in achieving a goal; variety of methodical counseling; parity of teacher-student relations. A training module integrates different courses or learning topics into the structure of one discipline. Ways of designing modules are various. Sometimes the module is created on an interdisciplinary basis to achieve a specific learning goal. In this case, it includes several systematic training courses. Based on a set of different modules, an individual studying plan is designed. In the future, this technology may allow individual students to specialize in several fields, taking into consideration that modular programs must relate to different specialties. In professionally oriented modules, the student's activity, as a rule, is systematized according to the following scheme: educational-cognitive – educational-professional – professional trajectory.

*Personalized learning* – independent performance of work in an individual pace according to specially prepared printed methodical materials. The transition to the next educational unit is allowed only after studying the previous one, the mastering of which is checked by means of test examinations, complex control works with the use of automated control. Independent work is accompanied by weekly group meetings of students and written reports. The student independently studies the material in portions. In case of personal conviction in mastering it, he turns to the teacher and receives a "readiness test". Permission to proceed to study of the next part of material is possible only after receiving high grade for the previous portion. After passing all the program material in a particular subject, the student is given total points.

*Group-individual training* – is used in small groups, when the presence of a significant number of students who lag behind in education, does not allow to teach the material to the whole academic group at once. The principle of group-individual training is perfection in studying – perfect mastering of educational material by each student, regardless of abilities. Among requirements for organization: students' awareness on the purpose of study; providing methodological recommendations for organization of independent educational activities; providing students with low ascending levels with additional opportunities; Continuous Progress – flexibility and dynamism of studying process. Students are grouped (4-5 people). The teacher selects the groups so that their composition is as heterogeneous as possible according to several criteria: the group

includes boys and girls who differ, for example, in learning, ethnic origin, and so on. The training material is divided into programmable portions-sections, members of the subgroup work on different sections. Each student processes the material of the section at his own pace in a certain sequence: acquaintance with the recommendations developed by the teacher to master a particular skill; elaboration of a series of work plans, each of which is devoted to mastering certain skills – components of this skill; independent check of level of mastering a specific skill; final test (placement test). Team members work in pairs, checking doing of control tasks on 100-point scale. If the student achieves 80 percent or higher result in the mode of independent work and peer review, he passes the final test of this skill. It is conducted by another student appointed by the teacher (student monitor), who has high academic results. By the end of each week, based on the results of final inspections (test indicators of each participant and number of performed weekly tests), the results of the teams are summed up, the team indicators are compiled.

One of the priorities in organization of pedagogical education at the level of master's and postgraduate studies should be *technology of asynchronous learning*, when students get the right to independently determine their own individual trajectory. Nonlinearity of education has significant advantages: flexibility, individual approach to a student, an ability to obtain two or more specialties at the same time, reduce of duration of studying and more. It should be pointed out that individual educational program forms three groups of disciplines: mandatory for study at a fixed time; obligatory for study in the terms determined by a student; elective courses. The construction of an individual learning trajectory takes place in the interaction of student and tutor, who diagnoses primary cognitive interest of each student, creates conditions for its deepening in the process of research or doing projects, provides tutoring advice on educational and professional programs.

Interactive learning technologies in the educational process of higher education are organically connected, interdependent, form a holistic system, provide for the introduction of innovative teaching methods: seminar-discussion, project method, modeling, student portfolio, brainstorming, multimedia presentation and more. All these technologies are organically connected, interdependent, form a holistic system, provide for the introduction of innovative teaching methods.

All these technologies are organically connected, interdependent, form a holistic system, provide implementation of innovative *teaching methods* (see Fig. 4.).

Among the most perspective are: *case-study* – an effective and widespread method of organizing active cognitive activity of students.

*Seminar-discussion* (group discussion) is a process of dialogical communication of participants, during which practical experience of joint discussion and solution of theoretical and practical problems takes place.

*Project method* – a set of consistently applied research, search, problem methods. The method contributes to the development of individual position in the implementation of the proposed research projects, which allows you to build an

effective intellectual process with formation of group opinion and collective decision-making.

*Student's portfolio (portfolio)* – a tool for self-assessment by students of the results of cognitive, research work, reflection on their own activities. «Portfolio» is a set of documents, independent work of a student. Tutoring functions are performed by the teacher of a specific discipline. He gives tasks (parameters by which the material should be selected), compiles questionnaires for the expert group in order to objectively evaluate the presentation of the «portfolio». Presentations of works take place periodically at student conferences. The student must show positive progress in this field of knowledge, compare their own assessment with the assessment of the teacher and a group of experts (from among students).

Principles of the method: self-evaluation of results (intermediate, final), mastering certain types of cognitive activity; regularity of self-monitoring; structuring of materials, logic and conciseness of all written explanations; accuracy and aesthetics of the «portfolio»; thematic completeness of materials; clarity and validity of the presentation.

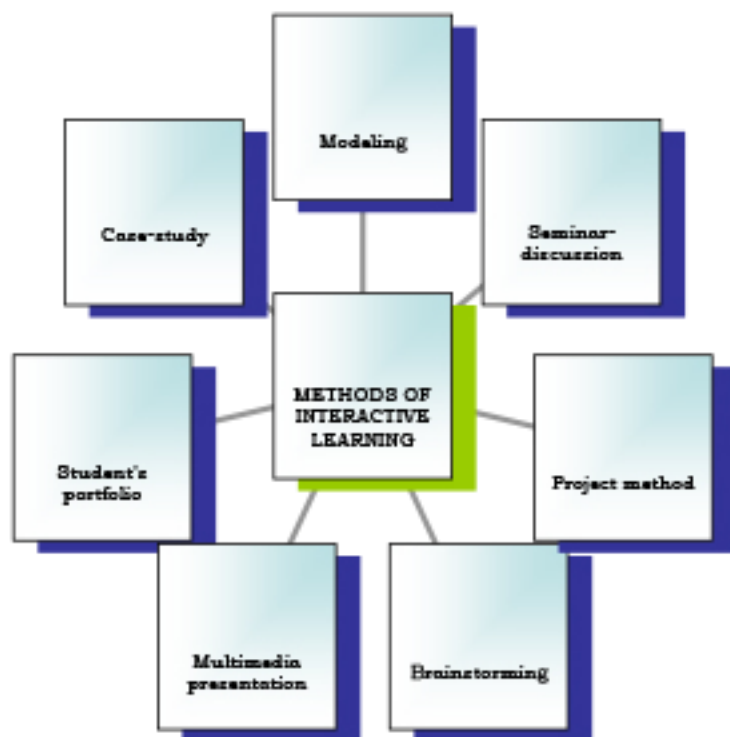


Fig. 4. Methods of interactive learning



*«Brainstorming»* – the method of learning based on formulation of the problem, which has theoretical and practical significance and is of active interest to students. The general requirement to choose a problem for "brainstorming" is to provide ambiguous, diverse options for its solution. The method of organizing and conducting a "brainstorming" includes the following stages: organizational (location of the academic group in a particular room); initial (the teacher informs the topic, reveals the peculiarities of the organization of the lesson, formulates the problem to be solved, substantiates the search task. Introduces students the conditions of teamwork and voices the rules of "brainstorming"); main (several working groups of 3-5 people are formed). Each group selects an expert, whose responsibilities include the fixation of ideas, their further evaluation and selection of the best proposals.

Modeling (from English modeling, German - modeling) – one of the main categories of the theory of cognition and a scientifically sound way to study the world and man [21, p. 3]. The model is a descriptive analogue of the activity, which in formalized constructions reflects its most important characteristics. Also, the model is understood as an image of a real object or process in an ideal form, which reflects the essential properties of the modeled object or process [23, p. 374], ie modeling is based on the replacement of a specific object of study (conventional original) with another similar to it, ie the model. Clarifying the generally accepted definition of the model, E. Smirnova emphasizes that the model is "a descriptive analogue of the activity, which in the formulated constructions reflects its most important characteristics" [11, p. 17].

The effectiveness of the modeling method in the study of pedagogical phenomena is substantiated in the studies of S. Arkhangelsky, V. Zagvyazinsky, L. Kondrashova, N. Kuzmina, V. Slastyonin and others.

Domestic scientists V. Andrushchenko, N. Demyanenko, I. Dychkivska, V. Luhovy, N. Malinovska, O. Mukoviz, O. Pekhota, O. Pometun, L. Pyrozhenko, S. Sysoeva, O. Shpak and others. see the benefit of using such pedagogical technology as modeling in the fact that teachers can design the educational process on the principles of systematization, predict its development, focus on achieving the end result [3; 4; 5; 6; 9; 10; 13; 14; 15; 17].

Comprehensive analysis of research by both domestic and foreign scientists and their own experience of scientific and pedagogical work suggest that the strongest feature of project technology is its ability to integrate knowledge from different subjects based on personal practical experience of higher education, which, in turn, is a prerequisite for the formation of their respective design and technological and information and communication competencies.

We understand the model as an ideal system, the study of which allows to obtain information about the real pedagogical system in the unity of its constituent elements:

- structural (from the point of view of model and object construction);

- functional (from the basic mechanisms of functioning and development);
- information (from the information that may contain the object and the model).

An essential feature of design technology is its algorithm, which must be mastered by both students and teachers. The model is always an analogy and an intermediate link between the proposed theoretical positions and their verification in the real pedagogical process of the future profession. The main purpose of the model – to replace the object itself in the process of information.

The modeling process includes the following stages: qualitative characteristics of the subject of research; setting modeling tasks; model construction; study of the model and its possibilities for the purpose of the study; meaningful integration of research results obtained using the model. Depending on the means of construction, there are material and ideal models. Material models include models embodied in metal, glass, etc. Ideal models include visual, verbal, symbolic (symbolic) and mathematical (punch cards, software formulas, graphics) models [13, 64].

We consider the concept of modeling through several meanings:

- method of cognition of objects through their models, the process of construction of these models, the form of cognitive activity (thinking and imagination), modeling of thinking operations (N. Menchinskaya, A. Rodionov, etc.);
- formation of personality traits (L. Kondrashova, T. Yatsenko, etc.).

*The method of modeling* – imitation of the actual existing pedagogical system by creating special models, schemes, symbolic or real analogues, which reproduce the principles of organization and operation of this system. The pedagogical conditions for the development of the future teacher's personality by means of modeling are scientifically substantiated [10, p.157].

The phased application of models is due to the structure of modeling as an activity that contains the following components of the operation: preliminary analysis, construction of a model, scheme or perception of the finished and work with language material using schemes, models. It is proved that the professional and personal development of the future specialist is provided by a special organization of the developing interactive communicative environment aimed at the use of different types of models, the development of initiative, independence and creativity.

In the course of the research the following pedagogical conditions were realized: stimulation of cognitive interest in modeling of pedagogical situations in educational process with designing for the future professional activity; creating an interactive communicative and developmental environment aimed at using different types of models in the professional and personal growth of future professionals.

The presented method of using modeling allows to intensify interactive communicative and speech activity of future teachers, improves pedagogical technique and skill in personality-oriented practical activity, forms in them ability to make the accurate plan of kinds of professional activity, to predict their realization and to define new projects. , teaches to form and express opinions, draw logical conclusions.

The results of the study showed that the use of modeling is fully consistent with the personality-oriented model of organization of the educational process, which takes into account the individual characteristics of the future specialist. With the help of modeling the level of development of creative and projective abilities of future teachers has improved.

The problem of professional training of future teachers has been described in researches of the following scientists: V. Benera, O. Bogich, I. Bogdanova, A. Bogush, G. Bielienka, N. Gavrysh, T. Zharovtseva, L. Zdanevych, I. Kniazheva, T. Ponimanska, M. Roganova, T. Tanko, N. Lysenko, N. Malinovska and others.

Issues of using multimedia presentations in the training of future specialists were studied by the following scientists: Y. Avsiukevych, V. Bykov, M. Zholdak, I. Zakharova, V. Klochko, A. Kolomiyets, Y. Mashbyts, I. Pidlasyi, O. Spivakovskiy, A. Khutorskyi and others.

A *multimedia presentation* is an information tool that allows you to convey information in a visual, schematic way, which improves its perception and increases its value. Depending on the selected criteria, several groups of multimedia presentations are distinguished. By purpose, there are trade, marketing, corporate and training.

The main purpose of corporate multimedia presentations is to support the speaker's speech at a particular event – a scientific conference, scientific and practical seminar, and methodological association of educators of preschool education, presentation of goods or services of a particular company or corporation. Such presentations contain mainly visual materials and a minimum of text, as a significant amount of information is conveyed to the audience by the speaker. Educational presentations are used during training sessions: lectures, seminars, practical and laboratory. They correspond to the structure and scenario of the lesson, contribute to the full realization of educational goals. Multimedia presentations should be interactive, ie provide feedback to higher education students.

It has been experimentally proven that, perceiving information by ear, a person is able to process up to one thousand conventional units per minute. If visual perception is involved in the outlined process – up to 100,000 units of information [1]. O. Pometun, L. Pirozhenko argued that if a person perceives information only by ear, he remembers 20% of its volume, if he reads the text – 30%, and when he reads the information with the help of both hearing and sight, he remembers about 60% of its volume [17].

Multimedia presentation is a didactic tool that allows to transmit information in a visual and schematic form for improvement its perception and increasing its value. The effectiveness of using multimedia presentations is achieved when the following didactic conditions are met:

– a harmonious combination of oral presentation of the material during a lecture session and knowledge acquired by students during practical and laboratory classes with the information of a multimedia presentation;



- ensuring maximum implementation of multimedia presentation functions, in particular, stimulating thinking, memory and attention of the higher education students;
- interactive orientation of multimedia presentation;
- the rational ratio of the time allocated to lecturer to familiarize students with the content of topic of the lecture session and the time allocated for a multimedia presentation;
- ensuring the perception of information using the maximum number of analyzers;
- availability of information for perception and analysis by higher education students;
- rational dosing of the volume of information presented using a multimedia presentation [4, c. 84].

Comparative analysis of the final exam scores of students in the control and experimental groups of the higher education students confirmed our hypothesis that multimedia presentations are the effective means of increasing the level of knowledge of students, forming their information and communication competence.

The effectiveness of the introduction of interactive technologies for teaching masters in order to increase their level of educational achievement, the formation of their professional competence and personal development is ensured by following a comprehensive approach to the measurement system by the teacher. (see Fig. 5.).

The integrated nature of a graduate's competence requires to develop holistic system of measuring instruments. In the practice of pedagogical universities, *qualification tests* are widely used, which divide the tested into groups of trained and untrained [7]. These are called mastery tests. The results in this case are interpreted from the standpoint of criterion-oriented approach. The use of mastery tests is not intended to compare student achievement, as is done in tests with normative-oriented interpretation of results, but to assess the level of preparedness in accordance with a predetermined criterion, which may be minimum required level of professional competencies. At the same time, since competence presupposes a higher level of preparation, including not only knowledge and skills, but also experience, achievements, personal qualities of the student, it is important, among other things, to assess cognitive activity, creative potential of an individual. These qualities are necessary for development of professional skills and creativity.

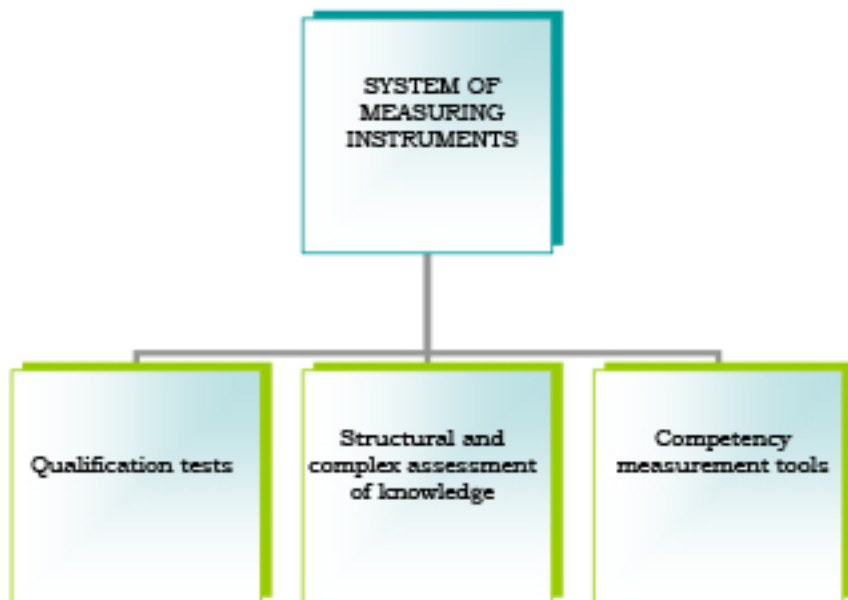


Fig. 5. System of measuring instruments

The support is carried out on a case-meter in the form of special problem tasks, where the student is asked to comprehend a specific professional situation. In solving the problem, he must use concepts and methods from different disciplines, transfer technology from the field to a new field, build models and assess their adequacy. In this case, work on the «case» can be carried out both independently and in collaboration with other students, justifying their own choice of optimal solution. When developing a case, it is important to carefully select the situational tasks of professional and pedagogical orientation and ensure the reliability and comparability of measurement results.

Innovative for summarizing indicators within the credit-module organization of the educational process is not a separate rating control or test system, but a *structural and complex assessment of knowledge* of normative and variable disciplines, types of professional and scientific activities, including practice, research work of students and etc., which contributes to the formation of student's competence. In each discipline the basic themes (blocks-modules) are allocated. Measuring instruments used for current and final certification of a student are noted. Structural and comprehensive assessment makes it possible to correlate the content of professionally oriented, general pedagogical disciplines with the content of subject competence, as well as to overcome an isolation of knowledge and skills generated by the study of individual courses. Accordingly, the question of criteria for measuring the level of competences is relevant.

In order to monitor the process of training graduates of higher education institutions and implementation of contextual-professional model of specialist training, a *toolkit for measuring competence* is being developed. Taking into consideration that means should identify both content and activity components of graduate training, we can provide the following indicators of competence (using the analyzed methods, techniques, technologies): compiling a portfolio of students; application of practice-oriented and situational tasks in the educational process; obligatory public defense of qualification work; inclusion in the content of complex qualification exam of integrated tasks of professional orientation; increasing of number of workshops, trainings that would allow students to demonstrate and consolidate competencies; development of tests of minimum competence; use of case meters.

Thus, new educational environment is formed, based on the principles of open learning: reliance on information technology;

- designing the modern content of education;
- development of innovative pedagogical technologies of formation and development of professional competences;
- solving problems of measuring the quality of education;
- changes in traditional role of teacher as a translator of knowledge and his mastery of the role of tutor.

The experience gained today in Ukraine and abroad shows that interactive learning technologies contribute to the intensification of the educational process and the intensification of educational and cognitive activities of masters. This is manifested in the need to:

- analyze educational information, be creative in learning the material and therefore make learning more accessible;
- independently find possible resources to solve the problem;
- develop a strategy for achieving goals and plan specific actions;
- learn to formulate their own opinion, to express it correctly, to prove their own point of view, to argue and discuss;
- learn to listen to another person, respect alternative opinions;
- model different social situations, enrich their own social experience through inclusion in different life situations and experience them;
- learn to build constructive relationships in the group, determine their place in it, avoid conflicts, resolve them, seek compromises, seek dialogue;
- find a common solution to the pedagogical situation, problem;
- to develop skills of project activity, independent work, execution of creative plans.

According to the results of the study it should be pointed out, that content of modern higher education institution should be creation of an innovative educational environment for formation of a culture of independent educational and

scientific work of participants in the educational process in the conditions of internationalization of higher education.

The use of a technological approach in the training of future teachers for the first job corresponds to current trends in the European paradigm of education and will increase the effectiveness of higher pedagogical education in Ukraine.

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