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TRADITIONAL REQUIREMENTS AND INNOVATIVE LEARNING MODELS IN THE HIGHER EDUCATION CONTEXT

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Abstract: Improving the efficiency and effectiveness of the educational process should be based on the development of personal potential and intellectual abilities of students, which implies the ability to generate and use knowledge in new situations. Today, the main task in training specialists, especially in higher education, is to develop and improve such skills among students. Benjamin Bloom's taxonomy, which establishes a direct link between learning objectives and the hierarchy of cognitive processes, seems to be a practical and convenient tool for setting objectives and evaluating learning outcomes. This article discusses the relationship between modern training requirements and the need for special work by the teacher on the goal-setting of pedagogical activity with an indication of the criteria of the end result in the assimilation of course content, cognitive and communicative activities. The article describes the results of testing the methods of teaching the subject through a system of various controlling procedures. using Benjamin Bloom's taxonomy to describe the cognitive knowledge and taking into account the changes made by Anderson and Kravlov (2001) on the organization of lectures, learning of educational material, development of cognitive and communicative activities, allowing to implement a qualitative assessment of the results of training students at the university. The method of modeling the content of the subject and a set of methods to motivate students to learn the content of the course, the development of cognitive needs, communication and intellectual sphere of all students. The factors limiting the use of binary lectures in the educational process are described. Practical recommendations on the use of this technology in the educational process have been developed.

Keywords: educational process, innovative technologies, lecture, Bloom'sTaxonomy, pedagogical tasks, analysis, efficiency

Introduction. Deep qualitative changes in society, connected with the formation of market economy, revealed the problems: on the one hand, the quality of training of graduates of vocational educational institutions does not meet the requirements of the labor market, and on the other hand, the search and optimal use of conditions and potential opportunities of vocational education as an educational and production branch for the training of professional and competent workers of skilled labor and specialists.

The system of vocational education, which has been in place for decades, has not been able to fully meet the many aspects of society's development and the growing needs of people. There was a need to revise approaches to training of qualified specialists, reorientation of profiles of professions and specialties in accordance with the needs of production structures and development of environmentally "clean" technologies. Such transformations required changes in training content and innovative approaches to training [1-4].

Scientific and technological progress, information and computer revolution, formation of knowledge and ideas industry, development of new technologies, economic crisis dictate new tasks of education. More and more vocational training goals are activity orientation, ability to change, development of personal qualities that determine not only a person's professional characteristics but also his or her way of life, culture level, intellectual development. This means that pedagogical technologies should be oriented not only to the assimilation of knowledge in special disciplines, but also to the development of a complex of personal qualities of trainees. According to the data of modern science, the development of personality, cognitive and needs of the students' sphere takes place in the process of educational activity.

For introduction of innovative pedagogical technologies of training in educational process it is necessary to reveal the main tendencies in development of professional school, professional pedagogics as a science and the contradictions which have developed in new social and economic conditions, caused to life creation of more perfect models, systems of training of highly skilled experts.

Studies have shown that the main contradictions are as follows:

- between the demand for training of qualified and competent specialists and the possibilities of educational policy in the old forms of educational process organization;
- between the need to ensure professional development of the student's personality and the relatively narrow, mainly technological orientation of the process of education in special disciplines;
- between the significant number of pedagogical technologies accumulated in pedagogical science and experience and their insufficient penetration into the practice of vocational education;
- between the needs of practice in the transition to personal-oriented education in vocational training institutions and the weak development of this component in educational and curricular documentation;
- between the need to use pedagogical technologies for teaching special subjects and the lack of science-based pedagogical technologies with such a target-oriented approach.

These contradictions are especially noticeable in the system of vocational education at the stage of transition from the traditional system to such an organization of the educational process that will make it possible to fulfill the social order for personnel training in accordance with modern requirements, which determined the urgency of the research and made it possible to identify and formulate the research problem: how to ensure the professional development of students' personality in the process of study in higher education institutions on the basis of the organization of the educational process with the use of innovative methods.

Materials and Methods. For the research, a combined form of lectures was chosen, combining a binary form of lectures with the involvement of students as experts and a lecture-visualization with a visual presentation of the material presented, in this case in the form of slides and videos. For preliminary preparation of students for the lessons, the "Insert" technique was used.

B. Bloom's taxonomy was used in planning the experimental lecture class. The leading methods of teaching at the binary lecture are: discussion and method of interrogation of experts. This method makes it possible to clarify and expand students' knowledge on how to solve the issues considered in the lecture, to analyze the ways of solving the problems close to real life, which is very relevant in view of the current environmental crisis.

Comparative analysis of the results of material assimilation using traditional and interactive teaching methods was carried out based on the results of control testing. For

additional verification of the degree of material assimilation the final test was carried out using the system "I know / understand / do not understand".

The aim of the research was to develop and try out the method of goal setting in pedagogical activity using taxonomy B. Bloom to describe the cognitive knowledge and taking into account the changes made by Anderson and Kravlov (2001) on the organization of lectures, which allows to realize the qualitative training of students at the university.

The object of the research was the methodology of conducting lectures of the sub-discipline "Industrial ecology" in technical universities.

Discussion. The word "lecture" comes from the Latin "lection" - reading. The lecture appeared in Ancient Greece, got its further development in Ancient Rome and in the Middle Ages. The university lecture is the main link in the didactic cycle of education. Its goal is to form the basis for students' subsequent mastering of educational material. In the educational process there are a number of situations when the lecture form of teaching cannot be replaced by any other one [5].

According to the strength of personal emotional influence of the lecturer, his contact with the audience, his impressions, general influence on students, the lecture method of transferring the teaching material is the most successful. The lecture reveals the conceptual apparatus of a specific field of knowledge, problems, and logic, gives a complete picture of the subject, showing its place in the system of science, its connection with related disciplines, excites interest in the subject, develops professional interests, and to a large extent determines the content of other classes.

Essential for the lecture is the presentation of the materials of the lecturer's personal creativity. This increases students' interest in the subject, activates their mental work. In the lectures, the lecturer, along with a systematic presentation of the fundamental principles of science, expresses his scientific ideas, his attitude to the subject of study, his creative understanding of its essence and prospects for development. Each lecture requires his personal analysis of the development of scientific provisions and, at the same time, indispensable coverage of their current state, with a critical approach and disclosure of contradictions in the development of science and the practice of its applications. Preparing for a lecture requires the most careful selection of material, attracting bright and expressive examples illustrating the provisions of science. A lecture is also required to awaken and guide students' independent thinking activity, to form a worldview. This means that the teacher must not only have a comprehensive knowledge of the subject, but also have a deep understanding of the relevant pedagogical technologies and psychological foundations.

At the lecture, the audience is waiting for a lively, bright, meaningful message from the teacher. Here, in addition to knowledge and professional experience, he is required to have extensive erudition, logic of argumentation, enthusiasm for his field of knowledge and the inner need to ignite students with it. This means that the lecturer needs not only to influence the mind, but also the feelings of his listeners, that is, to have pedagogical skills.

Historical and cultural transformations of recent times are characterized by an increase in the density of information flows and the design of a specific communication environment, the acceleration of the pace of development of society and the need to prepare people for life in a rapidly changing social environment, reducing the scope of unskilled and low-skilled work, which determines the need to improve professional skills and retraining of workers, increasing their professional mobility. The unformed readiness and ability to continuously learn, improve their skills and, if necessary, change their professions may lead to the loss of life orientation. M.M. Akulich notes that the emphasis shifts from a "knowledgeable person" to a "person prepared for life" [6].

Self-development and self-realization become an important social value, and the development of ability to do so is a task of education.

All of the above is taking place against the backdrop of a crisis in book culture, a general decline in culture, accompanied by a decline in the intellectual level of the population, a massive loss of motivation to study, work and self-development. Scientists believe that the metaphor "consumer society" is appropriate for describing the current situation in our country [7].

Students often perceive themselves as clients of an economic corporation represented by a university, as buyers in the market of educational services, and see the meaning of higher education only in order to adapt more easily to the economic situation.

As M. V. Ushakova notes, students have a widespread technocratic idea that everything economically efficient is moral [8]. Most of them do not connect professionalism and moral values, underestimate deep knowledge, demonstrate narrowly utilitarian thinking, pragmatism, technicality, and lack of understanding of the meaning and role of humanitarian knowledge. Many students stop at the level of passive reproduction of uncritically learned knowledge, do not know how to analyze and systematize, draw conclusions, and express their position.

Thus, a new social and cultural type of subjects of pedagogical communication has appeared in the university audience. This cannot but affect the peculiarities of the lecture as one of the leading types of pedagogical interaction in higher education. In order that the growth of contradictions between the everyday social and communicative practices of a student and the educational system does not lead to irreversible consequences, it is necessary to transform both methodological approaches to the lecture, related to the awareness of qualitative changes in the educational environment, and the technology of reading the lecture, taking into account the features of modern students.

The lecture can be interpreted in different ways: as the main form of education in a university and a form of scientific communication, a kind of pedagogical discourse; as an example of a systemic view of science and an example of scientific argumentation; as a wonderful cultural phenomenon, carrying a humanitarian meaning; as a significant event in the life, scientific biography of many people and history of universities [9].

Along with the traditional problems of the status of lecture courses and the necessity of their preservation in the higher school, scientists are interested in the following aspects of lecture study, which have recently become the subject of active discussions:

- ways to reinforce the humanitarian meaning of the lecture,
- mechanisms of interaction of speech and thought in the lecturer's activity,
- the redundancy of lecture discourse,
- innovative approach to lecturing,
- lecturer's new tasks in modern education, etc.

The lecturer's tasks have expanded nowadays, in particular due to the emergence of a huge range of lecture options. Thus, in a lecture using virtual reality technologies, a teacher needs to think about the specifics of spatial representation of models and physical processes, imitation of direct interaction or contact of the self as a lecturer with simulated objects and phenomena [10].

A university lecture is undergoing natural changes in its content and forms due to the new needs and possibilities of the information society. At the same time it is still an actual form of work with students, which is connected with the huge pedagogical potential of the lecture, with the necessity to orient students in complex notions and problems, to systematize their knowledge of the subject.

The modern student as a person of information society is characterized by "patchwork worldview", "mosaic thinking", "clip consciousness", which is due to the scattering,

unsystematization, redundancy of information, which daily falls on the person. A student even that part of it, which has been selected and processed by the teacher, cannot always seriously analyze, accurately understand with the perception of deep multiple meanings. The role of the lecturer in this regard can hardly be overestimated. It is the lecturer who, demonstrating a scientific approach to problems, offering examples of interpretation and recombination of elements of new knowledge, brings the student to a more complex level of comprehension of events and phenomena, helps to overcome the fragmented perception and move to a holistic vision and understanding of the world. Due to the realization of the orientation function, the lecture is a sample of the systemic view of science, helps a modern student to rank scientific sources in importance, promotes the development of skills to assess them, sifting out unreliable or redundant information, generating new information [9].

Information technologies undoubtedly broaden the idea of pedagogical process from the point of view of its methodological base and methodical organization. They make it possible to expand the subject matter of the disciplines being taught, to enrich the material with content due to the possibilities of hypertext and hyper-media forms of knowledge representation and informatization re-structuring of the educational content. The use of information-intensive and emotionally intense forms and methods of students' work with virtual variants of object study, dynamic subjects of educational and cognitive situations at the lecture allow increasing motivation for learning.

The use of global telecommunications resources in the course of lecture pedagogical communication makes it possible to connect to the widest information environment of science, art, and culture. However, despite all the changes that have occurred since the advent of the "era of hypertext", modern university lectures, as before, value, above all, the clear presentation of the subject, brilliant argumentation, the breadth of the lecturer's views, his ability and sometimes talent to influence the audience. His conviction, emotionality, passion without false pathos, internal energy of speech, pause, expression of eyes, value estimates or their postponement, giving the audience the opportunity to come to some conclusion for themselves, create a humanitarian atmosphere of empathy, personal attitude to scientific ideas [9].

The lecturer, as a speaking person, can create prerequisites for the transition of a student from the position of a listening person to the position of a hearing person, empathizing, thinking, understanding person. The aforesaid actualizes the problem of the "staging" of a university teacher's speech, its logical and emotional composition, and inner direction, because he creates not only pedagogical, but also linguistic environment with his speech art in higher school [11, 12].

Thus, the lecture cannot disappear; it has remained a full-fledged environment for the development of subjects in the conditions of modern pedagogical communication. However, this development from a potential field will only become relevant if the teacher considers the lecture as a cultural phenomenon, a significant event in the life of participants. The lecture should be evaluated not only from the point of view of scientificity, logicality and rationality of content, but also from the point of inspiration of listeners to independent research, influence on their formation as people of high spirituality, who understand the meaning of their development and development of society and consider these processes as a great good. The lecture, in accordance with the mission of modern education, should create favorable conditions for possible transformation of the student's personality as a consumer of information into a person - a consumer of cultural values, and then - into their creator [9].

Поэтому очень важно преподавателям постоянно совершенствоваться, использовать в процессе обучение различные. Инновационные способы активизаци и познавательной деятельности студентов, особенно при проведении лекционных

занятий, развивать интерес к учебной деятельности и конкретной учебной дисциплине, сформировать у обучающихся ориентиры для самостоятельной работы над курсом[13].

Unconventional forms of lectures allow increasing interest in the academic discipline, provide opportunities for deeper consideration of problems, have a brighter emotional impact on the audience, but there are also disadvantages. The optimal combination of forms, methods and styles of presentation of theoretical material is chosen by each teacher.

At present, along with supporters, there are opponents of lecturing educational material. The opinion of "opponents" of lectures as the main form of education at the university: a lecture accustoms students to the passive perception of other people's opinions, inhibits independent thinking; a lecture discourages the taste for independent lessons; lectures are needed if there are no textbooks or few of them; some students have time to comprehend, others - only to write down the words of the lecturer mechanically. However, the refusal of lectures reduces the scientific level of students, disrupts the system and uniformity of work during the semester. Therefore, a lecture continues to be the leading form of organization of the educational process in the university. The above mentioned disadvantages can be largely overcome by the correct method and rational construction of the material.

Result. When reading lectures on the subject "Industrial Ecology", it is advisable, from our point of view, to apply a binary type of lectures involving students as experts and visualization lectures with a visual demonstration of the material presented, in this case in the form of slides and videos.

The conditions for effective use of binary lectures are given in Table 1.

In the course of the lecture, the students' knowledge necessary to understand the learning problem or to participate in collaborative work is updated. It is reasonable to plan the lecture session using taxonomy B. Bloom.

We have developed a plan-concept of the lecture using B.Bloom's taxonomy with preliminary orientation of the student to prepare the problem under consideration for further study.

The use of B.Bloom's taxonomy (gr. taxis - arrangement in order and nomos - law) [15,16] orients the teacher to the results of learning (Learningoutcomes) and setting not only cognitive but also affective goals of the lesson or series of lessons.

The notion of "taxonomy" (gr. taxis - arrangement in order and nomos - law) denotes such classification and systematization of objects, which is built on the basis of their natural interrelation and uses for description of objects the categories, located sequentially, by increasing complexity.

Table 1.Binary lecture - visualization - conditions of effective application

№	Learning process factors	Features and conditions of effective implementation
1.	*Features of the form of implementation*	Knowledge generation takes place in the process of launching a discussion on a given topic through a dialogue between the teacher and the student, in the mandatory connection of the discussed issues with key educational issues on the topic and demonstration of material in the form of slides, virtual slides and stands, banners, videos, etc.
2.	*Purpose setting*	Knowledge generation takes place in the process of launching a discussion on a given topic through a dialogue between the teacher and the student, in the mandatory connection of the discussed issues with key educational issues on the topic and demonstration of material in the form of slides, virtual slides and stands, banners, videos, etc.
3.	*Volume of content and complexity of learning information*	Allows a wide coverage of the topic of the session, covering a large amount of information, focusing on theoretical and practical problems of the field of study.
4.	*Impact of learning methods on learning achievement*	If there is a visual presentation of information (presentation in the system of "slideshow"), in the process of audiovisual perception and discussion it is achieved - 70% of learning material.
5.	*Learning opportunities for trainees*	The student should be familiarized with the topic to be discussed and ready for active discussion, familiar with the rules of discussion. It is necessary to encourage active participation of students in the discussion: give the task to all students to study the study material (the text of the lecture, additional literature) and make a list of questions of problem nature to the experts/participants of the binary lecture.
6.	*Time spent on preparation and implementation*	A maximum of time is required by a preliminary stage in the preparation of problematic issues, organizational moments at the invitation of experts, and agreement with them on issues to be discussed. Sufficient time should be given to summarizing the session
7.	*Training conditions*	There are no special ones, but TSO, flipchart can be used.
8.	*Features of the relationship between learner and student*	Cooperation: encouraging independent thinking, self-expression, self-presentation of students
9.	*Number of trainees*	Restricted (up to 30 people)
10.	*Competence and personal qualities of the trainer*	Higher requirements to leading teachers/experts: they must be intellectually and personally compatible, have "common thoughts", have developed communicative skills, improvisation abilities, quick reaction, show a high level of mastery of subject material, often going beyond the content of the topic, actively involve students in the discussion.
11.	*Possible modifications*	Binary seminar-discussion when students are divided into supporters of two different theories, points of view, scientific

Plan outline of the lecture
Theme: "Basic principles of developing resource-saving technologies".
Class type: binary lecture - visualization with students.

The objectives of the lesson:

-Learning: To provide a holistic view of the importance of natural resources and their sustainable use;

-Developing: develop students' interest in studying the causes of ecological cataclysms of our time; develop their ability to model and predict ecological disasters that have a negative impact on nature and the environment.

-Educating: developing a sense of unification with nature; responsibility for our common home, harmonization of relations between nature and technology.

Setting goals through internal processes of intellectual, personal and emotional development of the student:

-formation of skills to analyze observed phenomena and processes;

- to form the ability to independently analyze the situation, the conditions of its emergence and find ways to solve it;

- to develop cognitive; independence of students in the process of solving production problems.

The result of the training is a formulation of what the student is expected to know, understand and be able to demonstrate after completing the training process.

Before the lecture...

Motivation: Why are the questions in this lecture important for humanity? How does this relate to what you know from your life experience and in other disciplines? What opportunities do you offer to know the reasons for the need to develop resource-saving technologies and how to solve them?

Objectives: What specific knowledge and concepts will be studied or expressed? What will students do with this knowledge and concepts?

Prerequisites: What should the student already know or be able to successfully master the information in this lecture?

Evaluation:What will be the evidence of the students' knowledge?

Sources and Time Management: How will the sources and time management be distributed?

During the lecture...

Encouragement: How do you encourage students to form questions and how will they evaluate their previous knowledge?

Understanding Ideas: How will students learn the content of the lecture material? How can they track their understanding of the lecture material?

Reflection:How will students use the knowledge gained? How will it lead to reflections on new knowledge, finding answers to questions and solving doubts?

Conclusion:What are the final judgments, conclusions to be reached by the end of the lecture?How appropriate are the final resolutions?

After the lecture...

Addendum: What further actions are stimulated by the knowledge of this lecture material? What should students do at the end of the lecture?

The concrete actions of students, testifying to obtaining cognitive knowledge using B.Bloom's taxonomy (1956) and with the introduction of Anderson and Kraftvol's changes (2001) are given in Table 2.

To check the degree of assimilation of the lecture material, it is recommended to conduct a final check using the Insert technique. In case of the answer "I don't understand", it is necessary to specify a section or a specific question, which are not sufficiently understood by students.

The "Insert method" - considered to be an interactive definition system for effective learning and thinking, helps with independent study (Table 3).

In order to determine the effectiveness of the proposed method of conducting lectures on the discipline "Industrial ecology" in comparison with traditionally used lectures-monologues 3rd year students were divided into 2 groups of 25 people: control and experimental. The level of academic performance in the control experimental and experimental groups was 100.0%, and in the control group academic performance (the number of students studying for "excellent" and "good") is 16.5% higher than in the experimental group (Fig. 1).

In the control group there was a monologue lecture with the use of slides, and in the experimental group - a binary lecture-visualization with the use of students and visual material. At the end of the lesson, testing was carried out in both groups. The conditions for passing and assessment of students' knowledge were the same; the results of the test on the main exam are shown in Fig. 2 and 3.

Table 2. Specific actions by students indicating that they have reached this level

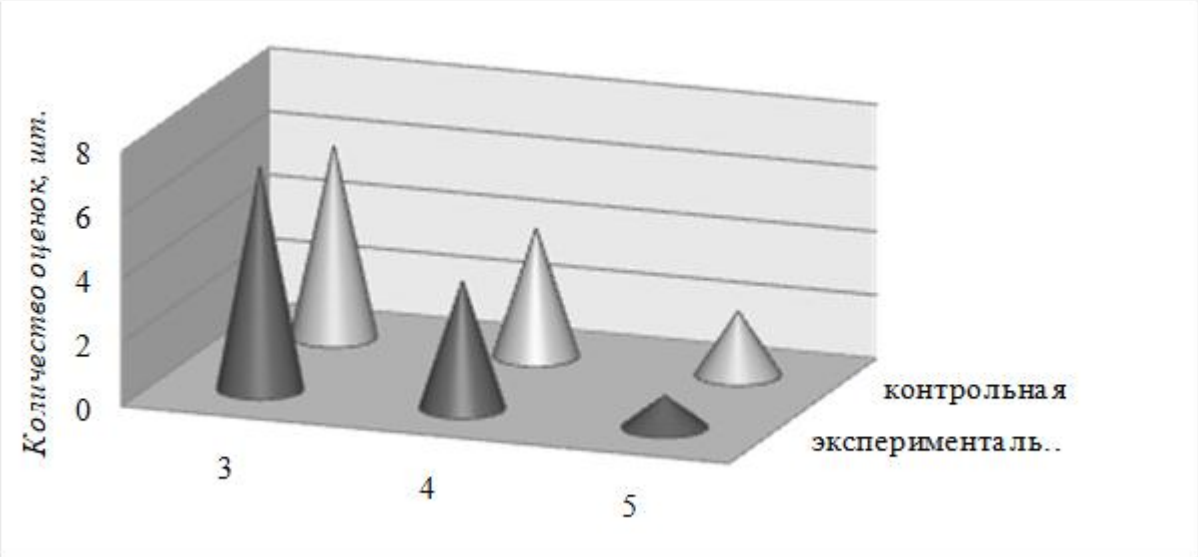
Pedagogical tasks:	A student must:
1. KNOW	
1.1. *1.1. Find out the student's preliminary knowledge about the importance of natural resources for modern society.* 1.2. *1.2. Suggests to formulate a definition of key words.*	1.1.Formulates a link between the production of consumer goods and environmental problems of our time. 1.2.Defines keywords.
2. TO THINK AND UNDERSTAND	
2.1. *Discusses the meaning of the lecture's information material.* 2.2. *Explains the degree of understanding of the causes and possible consequences of environmental disasters resulting from irrational use of natural resources.* 2.3. *Checks the degree of knowledge about causation of negative impacts of human economic activity on the environment.* 2.4. *Suggests ways of solving this problem.*	2.1.*She gives her own opinion on the significance of the lecture material.* 2.2. *Explains the significance of natural resources.* 2.3. *Compares the problems of interrelation between human economic activity and the environment.* 2.4.*Explains the ways of solving this problem.*
3. APPLICABLE	
3.1. *Describe ways of practical application of ecological principles of rational natural resources at home and at work.* 3.2.*Justifies the need to apply knowledge of environmental regulation in the preparation of service documentation.* 3.3.*Arguments the need for certain measures to ensure environmental safety of production processes.*	3.4. *Apply knowledge in case-by-case analysis to maintain environmental conditions at the required level.* 3.5. *Use knowledge of environmental regulation in the execution of graduation work.* 3.6. *Binds the solution of production tasks to environmental standards and requirements.*
3. ANALYZE	
3.1. *Breaks down information material into its components.* 3.2. *Illustrates the classification of natural resources.* 3.3. *Identifies the reasons for the unsustainable use of resources.* 3.4. *Offers development and introduction of "non-waste" technologies as a solution to this problem.* 3.5. *Analyzes various trends in the rational use of natural resources and waste recycling*.	4.1. *understands the structure of the material in question.* 4.2. *divides natural resources into groups.* 4.3. *Gives examples of irrational use of natural resources.* 4.4. *Suggests and substantiates alternative solutions to this problem (low-waste and resource-saving technologies).* 4.5. *Compare these trends and draw conclusions.*
5. *SYNTHESIZE* .	
5.1.Summarizes the questions discussed on the subject of the lecture. 5.2 Arguments the basic knowledge that a student should have on the material.	5.1.Discusses lecture questions, asks questions. 5.2.1.1 Discusses lecture questions, asks questions. 5.2.2.2 Enquires with ideas

Table 3.Rules of work with application of "Insert Techniques"

1. *Read the text of the lesson using the following system of marks in the text fields*:
(√) – confirms what I know.
(+) – new knowledge
(-) – as opposed to what I know
(?) – puzzling. That's where I need the extra data..

2. *Systematize the information obtained as a table*:

Topic issue	***V***	**+**	**–**	***?***
Natural resources, their values and species.				
Systemic approach to environmental management and problems.				
Optimization of environmental management				
Greening of production				
Basic principles of non-waste technological processes organization				



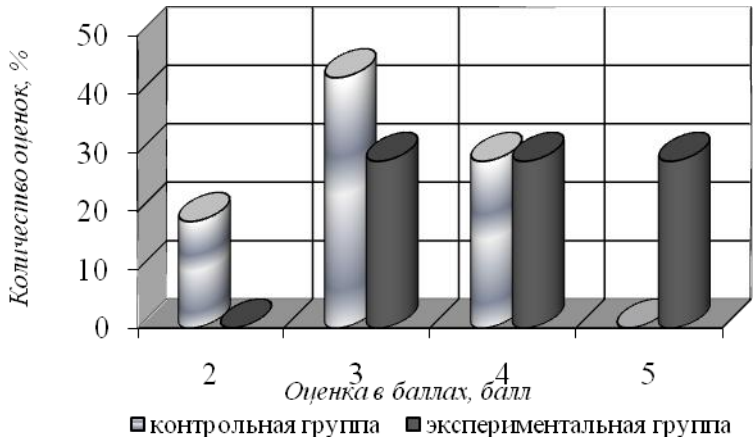


Рис. 1. Показатели успеваемости в контрольной и экспериментальной группах

Fig.2. Results of student knowledge assessment on the main exam in control and experimental groups

It should be noted that the specificity of the usual assessment is that it is impossible to determine with its help how much material will be kept in the memory of students firmly and for a long time. In addition, the information that a specialist will really need in the future for active creative activity is not always held firmly and for a long time. In this connection there is a problem of revealing such information with the purpose of its more successful fixation.

The expert estimation of residual knowledge by means of tests is perspective in this direction. Thus it is expedient to evaluate the knowledge of students after a certain period of time after the study of the material (discipline). As a result, rather precise criteria, evaluating the efficiency of teachers' and students' work, are revealed.

To date (despite the fact that psychological research has established a number of patterns of forgetting information), the practical application of such control was difficult because of the weak study of the processes of forgetting various academic knowledge (in particular, engineering). In order to determine some patterns of forgetting necessary for the development of requirements for the control of residual information, we conducted a second test in the control and experimental groups in 1 month after the main test. The results of the test are shown in Fig. 3.

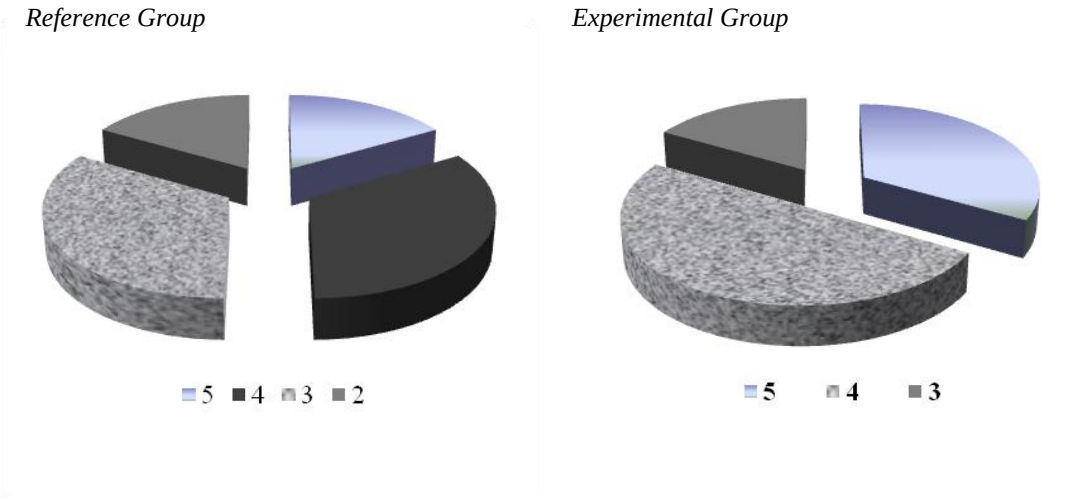


Fig.3. Results of repeated evaluation of students' knowledge on the main exam in control and experimental groups

The number of students who received "excellent" and "good" grades in the control subgroup was 50.0%, while in the experimental subgroup it was 80.0%. Consequently, there was a decrease in the level of students' knowledge, which indicates that a certain group of knowledge is completely forgotten or absent.

Conclusion. Classic Lecture - is a self-congratulatory presentation of the educational material by the lecturer, as a rule, in the form of a monologue. At the present time, the variant of conducting the classical form of the teacher's high professionalism, expressiveness and figurativeness of the speech, the presence of backward communication with the audience. Monotonous and monotonous presentation, and sometimes mechanical reading of the educational material, in the presence of a large number of easily accessible and sources of information is practically not accepted by the modern audience.

The most common means of activating the listeners is to engage them in dialogue, to provide exchanges, assessments of information by the subjects of education and training, as well as the interaction of scientific knowledge. Organizing a dialogue session allows: to see

the audience's reaction to the information; to determine the depth of understanding; students at the very beginning of the class to ask their questions about the topic under study.

In this context, the use of binary lectures is appropriate. However, the use of this type of lectures is limited by a number of factors. For example, it is difficult to implement this approach when teaching on streams with a large (more than 30) number of students: you will either have to increase the time for studying the topic, or reduce the volume of the lecture and submit part of the material for independent study or for seminars. In the process of interactive learning, the thoughts or actions of others are borrowed. It is also difficult to use this technology in the process of teaching certain topics in technical disciplines, where the generally accepted postulates are practically stated. At the same time, these forms of learning have more advantages than limitations. They are associated primarily with a sensible approach to the content of a lecture by students, development of skills for content analysis, increasing learning and cognitive motivation, reducing the level of anxiety of participants, increasing efficiency of learning and actualization of knowledge, improving the psychological climate in the classroom. Students form their own point of view, they learn to scientifically argue for their opinion. Students learn to communicate with each other, with teachers, acquire communicative competences, they develop a sense of responsibility and mutual assistance. To achieve these goals in the class it is necessary to create a comfortable psychological climate, while remembering the following: never blame for the wrong way of thinking, create a relaxed and trusting environment, to conduct a fairly frank conversation. All this makes it possible to overcome the often criticized passive character of students' perception of the lecture, as well as allows teachers to look at the problems of teaching from a new perspective.

Today it is already clear that a student needs to learn, above all, the ability to independently replenish and acquire knowledge. At the same time, it is necessary to take into account all the currently growing trends to generalize many of the latest theories, concepts and single scientific facts. These trends are also affecting the teaching process, dictating the need for flexible knowledge systems that, in turn, must shape the mindset of the learners.

Our experiments have once again proved the effectiveness of problem-search methods of teaching by the example of lectures on the subject "Industrial ecology".

References

[1] Batyshev, S.Ya. Professional pedagogy: Textbook for students studying on pedagogical specialties and directions (in Russian) / S.Ya. Batyshev.- M.: Association "Professional education", 2007. 512p.

[2] Ilyina, T.S. Experience of development of teachers' information culture by means of educational technologies / T.S. Ilyina, O.N. Shilova // Development of Regional Educational Information Environment "ROIS-2006": Proceedings of the Interregional Scientific and Practical Conference (http://rois.loiro.ru). - Saint-Petersburg, 2006. P. 120-123.

[3] Okolelov, O.P. Modern Technologies of Higher Education: essence, design principles, development trends / O.P. Okolelov // Higher Education in Russia. №2. 2004. P.21-23.

[4] Hodiyev, Yu.B. Modern educational technologies: theory and practice of realization/ Yu.B. Hodiyev, O.B. B. Khodiev, O.B. Gimranova. -Tashkent: TGEU, 2007. 320 p.

[5] 5. Verbitskiy, A.A. Active learning in higher school: context approach / A.A.Verbitskiy // M.: Higher school, 1991. 207 p.

[6] 6. Akulich, M.M. Education in the context of globalization / M.M. Akulich // University Management. - 2005. - № 5 (38). P.34-42.

[7] 7. Zapesotskiy, A.S. Metamorphoses of Mass Media: New Quality or New Diseases? / A.S. Zapesotskiy // SOCIS. 2010. № 7. P.11-17.
[8] 8. Ushakova, M.V. Higher School of Modern Russia: Trends and Prognoses // Socio-humanitarian Knowledge. 2003. № 4. P.18-24.
[9] 9. Zadorina, O.S. University lecture in the context of modern situation in education / O.S. Zadorina // Pedagogical education in Russia. 2012. № 4. P.34-37.
[10] 10. Dolgovesov, B. Technology of "immersion" of the lecturer in the interactive virtual environment / B. Dolgovesov, M. Lavrentyev, B. Morozov B. B. Morozov [et al.] // Higher education in Russia. 2008. №2. C.42-45.
[11] 11. Zadorina, O.S. Content and ways of realization of the pedagogical direction ideas in education: monogr. - Tyumen, 2010. 348 p.
[12] 12. Robotova, A.S. University lecture: past, present, future / A.S. Robotova // Higher education in Russia. 2011. № 4. P.28-32.
[13] 13. Slastenin, V.A. Pedagogy: Textbook for students of higher educational institutions / V.A. Slastenin - 3rd edition, stereotype - M.:Academy Publishing Center, 2004.576p.
[14] 14. Lobanov, I.V. Modern Directions of Development of Education in the Field of Culture: Context of Intercultural Dialogue // Culture and Education. 2015. № 2 (17). P. 3–12.
[15] 15. Materials of the GIZ Regional Project "Vocational Education in Central Asia - I"; component "Regional Network of Teachers (RNP)" - Module № 2 "Methods of vocational training and professional development", 2014 (Professor Frank Byuning).
[16] The Taxonomy of Educational Objectives; The Classification of Educational Goals, Handbook I: Cognitive Domain, Benjamin S. Bloom (Ed.) New York: David McKay Company, 1956.