POSSIBILITIES OF TOPICAL GAME-INTERACTIVE METHODS IN TEACHING STUDENTS IN HIGHER EDUCATION INSTITUTIONS

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Abstract: Scientific and technological progress puts new requirements not only for the person himself, but also for the system of higher professional education. The contradiction that has arisen between the growing volume of information and the crisis of didactic methods of training specialists requires a transition to fundamentally new technologies of vocational training. The need to change the priorities of professional training of specialists in the direction of the development of heuristic and creative thinking, the formation of the individual as a subject of self-development, mastering the tools for managing his own educational activities is becoming increasingly more obvious. In this regard, the reorientation of the system of higher professional education towards innovative activities is becoming an important tool in ensuring the competitiveness of graduates in the labor market. The transition to a competence-based approach in organizing the learning process provides for the widespread use of active and interactive forms of conducting classes in the educational process. The article substantiates the need to use interactive learning in the higher education system. The content of the concepts "interactive teaching", "interactive forms and methods of teaching" is analyzed. One of the more effective methods is gamification of teaching process, playing activities, the advantages and capabilities of which are discussed in detail in the article.

Keywords: Education development, Game-interactive methods, Higher education, Interactive teaching, Modernization.

1 Introduction

Many researchers characterize the modern educational trend in the world by the transition from traditional teaching methods to innovative ones. Pedagogical models of student-centered education are being actively developed. The need for the modernization of vocational education presupposes the search for innovative approaches, which are based on the idea of student-centered learning. This is due to the creation of the necessary pedagogical conditions for the formation of appropriate competencies among graduates of secondary vocational and higher educational institutions. The inclusion of competencies in educational programs contributes to the orientation of the pedagogical process towards the formation of the student's personality as an active, creative subject of professional activity.

One of the requirements of the process of implementing educational programs at the present stage is the widespread use of interactive forms of teaching in the educational process, since the formation of competencies regulated by educational standards is difficult to implement when teaching using traditional methods.

Unlike active forms and methods, interactive ones are more focused on the interaction of students not only with the teacher, but also with each other. In such a specially organized interaction, the teacher is the leader, he stimulates the students' initiative and the ability to make independent decisions [4, 5, 23].

The learning process itself and its result acquire significance for all participants and allow students to develop the ability to analyze information and identify a problem; the ability to find opportunities and resources to solve it; plan specific actions; reach the goal. Interactive learning allows students to update their knowledge, involve them in an active dialogue, enables learning to express their point of view, demonstrate their skills and develop certain skills. The use of interactive learning involves the modeling of professional and practical situations in the classroom, and their joint solution. The student becomes an active participant in the learning process. If in traditional teaching, the the teacher plays the role of a "mentor", then in interactive - the role of "helper", "partner", "ally" [1].

Interactive forms and methods are based not only on the principles of interaction and activity, but also on mandatory feedback. Thus, the main tasks of the teacher are to encourage students to be active and to involve all students in the joint process, without exception. Of course, an important condition is to establish the right relationship between the teacher and the audience and between the students in the group. The result of the successful application of interactive teaching methods is the ability to work well and interact with each other and the teacher.

Guided by the principle of optimality when choosing methods, it is necessary to proceed from the fact that each method is focused on solving certain pedagogical problems. In our opinion, one of the most effective types of interactive learning is the game method, or gamification. According to researchers, game simulation serves as a means of enhancing professional communication and is a tool for the formation of qualities that ensure the success of the performance of professional duties [3]. These include management skills, team interaction, conflict resolution, effective communication, persuasion and competent expression of thoughts, tolerance, social mobility, volitional self-regulation, independent decision-making, quick adaptation to innovations and changes, high mental and emotional stability [2, 13]. This determines the need to analyze and systematize the methodological and didactic principles of building special courses, focused on mastering professional competencies and soft skills in students through game teaching methods.

2 Materials and Methods

Modern education, although it provides versatile knowledge in various subjects, is still very much dependent on the volume of textbooks and teaching aids accumulated over the years, which are often outdated and irrelevant. Sometimes, we are faced with a situation that the knowledge acquired by a student ceases to be relevant by the time of his graduation from a higher educational institution. As a result, students are not ready for the realities of professional activity.

One of the modern methods of solving this problem is gamification. Gamification represents the use of game approaches for non-game processes in order to increase the involvement of participants in solving applied problems. The term was proposed in 2004 by the English programmer Nick Pilling [3].

Gamification usually aims to involve the student in learning in the same way that a computer game involves the player, implies the creation of "such a system in which the success of the participant's playing depends on his skills and knowledge that can be transferred to the real world" [6, 19, 21].

Using gamification in education usually means using the following techniques [14, 15]:

- Techniques for attracting and retaining attention;
- Division of long-term incomprehensible goals into short-term and understandable ones;
- Creation of a system of winnings and risks that are understandable and relevant for the participants;
- Creating a balance between the participant's abilities and the complexity of the tasks;
- Conducting games, that is, modeling conditional situations with which the student must get acquainted and in which he must learn to act.

Using these techniques in the process of teaching students, it is important to take into account the characteristics of the target

audience, such as age, personal attitudes, model of behavior in the game.

To achieve the goal and solve the research tasks, the following research methods were used: critical analysis and generalization of methodological, psychological, pedagogical, philosophical literature on the topic of the interactive and game methods of teaching, analysis of scientific research related to the problem of interactive and game learning. In the course of the study, methodological and didactic principles for the construction of training courses aimed at students' mastering, along with "hard skills" in the specialty, professional communicative competence based on the use of game teaching methods in the interactive ecosystem of university education were determined. Through the prism of a systemic, competence-based, activity-based, personality-oriented, axiological approach, the article analyzes the organizational forms of interactive learning at a university and the game method as its practical implementation.

The theoretical provisions and conclusions contained in the study contribute to an increase in the efficiency of the learning process in higher education. Interactive learning in the higher education system contributes to the achievement of interdisciplinary and metadisciplinary results, which corresponds to the modern state educational standards of higher education. The main ideas of the research can be used in organizing the educational process of higher education, as well as in solving practical issues of improving national education systems.

3 Results

Interactive teaching methods are most consistent with a student-centered approach, since they involve co-learning (collective, collaborative learning), and both the student and the teacher are subjects of the educational process. The teacher often acts only as an organizer of the learning process, a group leader, a facilitator, and a creator of conditions for student' initiative. Interactive learning is based on the students' own experience, their direct interaction with the area of mastered professional experience. Learning with the use of interactive educational technologies presupposes a logic of the educational process that is different from the usual one: not from theory to practice, but from the formation of new experience to its theoretical comprehension through application.

At the heart of interactive teaching methods, the fundamental is the initiative of students and the ability to independently solve a problem, which is stimulated by the teacher from the position of a partner and assistant. Interactive forms and methods allow forming an interested attitude to the formulation and solution of professional tasks and problems, independence and creativity of thinking, teach students objectivity and consistency in decision-making [4]. Considering some aspects of conducting classes in an interactive form, we can conclude that the introduction of interactive learning is one of the factors of its intensification, since such training allows to successfully achieve the goals of enhancing educational and cognitive activities, ensure the comprehension of educational material, individualize pedagogical interaction, form knowledge, skills and pronounced personal qualities of students.

There are the following general results and effects of interactive learning [5, 8, 17, 22]:

1.   Interactive teaching methods allow intensifying the process of understanding, assimilation and creative application of knowledge in solving practical problems. Efficiency is ensured through more active involvement of students in the process of not only obtaining, but also direct ("here and now") use of knowledge. If the forms and methods of interactive learning are used regularly, then students develop productive approaches to mastering information, the fear of making a wrong assumption disappears (since an error does not entail a negative assessment) and a trusting relationship with the teacher is established.
2.   Interactive learning increases the motivation and involvement of the participants in solving the discussed

problems, which gives an emotional impetus to the subsequent search activity of the participants, encourages them to take specific actions, the learning process becomes more meaningful.
3.   Interactive learning forms the ability to think out of the ordinary way, to see a problem situation in own way, ways out of it; justify own positions, values in life; develops such traits as the ability to listen to a different point of view, the ability to cooperate, to enter into partner communication, while showing tolerance and benevolence towards the opponents.
4.   Interactive teaching methods make it possible to carry out the transfer of methods of organizing activities, to gain new experience of activities, its organization, communication, experiences. Interactive activity provides not only an increase in knowledge, skills, methods of activity and communication, but also the disclosure of new opportunities for students; it is a necessary condition for the formation and improvement of competencies through the inclusion of participants in the educational process in a meaningful experience of individual and collective activities for the accumulation of experience, awareness, and acceptance of values.
5.   The use of interactive teaching technologies makes it possible to make control over the assimilation of knowledge and the ability to apply the acquired knowledge, skills and abilities in various situations more flexible and humane.
6.   Result for a specific student: experience of active mastering of educational content in interaction with the learning environment; development of personal reflection; mastering a new experience of educational interaction, experiences; development of tolerance.
7.   Result for the educational microgroup: development of communication and interaction skills in a small group; the formation of the value-orientational unity of the group; encouragement to flexible change of social roles depending on the situation; adoption of moral norms and rules for joint activities; development of skills of analysis and introspection in the process of group reflection; development of the ability to resolve conflicts, the ability to compromise.
8.   Result for the "teacher-group" system: non-standard attitude to the organization of the educational process; multidimensional mastering of educational material; formation of motivational readiness for interpersonal interaction not only in educational, but also in extracurricular situations.

In turn, the educational game is currently the optimal interactive form of the educational process [9, 10]. In the game, a person completely immerses himself in the role assigned to him and reveals all his possibilities. Therefore, play activity is of great importance in the system of vocational training of students. Play activities are recreated in the classroom using play methods and conditions, which are called play technologies and are aimed at organizing the activities of students.

However, in order to introduce game technology into the educational process, it is necessary to find out the following: what competencies need to be formed, what educational material it is desirable to study using game technology, how to combine the game with other methods of education and training, what game technology needs to be chosen for a specific topic of the lesson and how to find time in the curriculum for its implementation and conducting [1].

The educational process based on the game must be organized correctly, in order to achieve desired outcomes. To do this, the following points should be enabled [16]:

▪   The model of the learning process based on the game is the inclusion of students in the game modeling of the studied phenomena, their living with a new experience in the game;

- Game learning provides an opportunity for students to independently think through and explain the decisions made, include students in modeling difficult situations, makes learning entertaining, intense, and even tension-like;
- Students have role-playing activities;
- A game situation is introduced and through it a problem situation is created, which is lived by the student participants in the form of a game, the basis of their activity is game modeling, part of the students' activity occurs in a conditionally game plan;
- Students act according to the rules of the game;
- The teacher performs several roles: organizer, assistant, and participant in the general process of the game;
- The game has two levels: subject-content and socio-psychological;
- In the process of playing learning, students gain experience of activity, similar to the one they would have received in reality [1].

Game technology is a holistic formation that covers a certain part of the learning process and is united by a common content, plot, characters. Each teacher, in order to build the educational process on the basis of the game, can compose various game technologies from individual games and elements. Carrying out game technology solves an important problem: everyone who takes part in it must find a way to self-expression, get to know himself, as well as other participants [12]. However, not every educator is a master at making games. Naturally, there are teachers who use playful teaching methods, and often make mistakes and blunders in this. In order to apply various gaming technologies in their activities, the teacher must know the general techniques for organizing work with a group, the methodology of the game 'library', understand the importance of presentation, communication skills, dynamics in the game. It is also important to be able to build this game. The teacher himself must be ready to play, involve, participate, and help all other participants.

The following features are characteristic of educational games [24]:

- Multivariance and multi-alternative solutions, of which it is required to make a choice of the most rational;
- The need to make decisions in conditions of uncertainty and in an environment of conditional practice;
- A variety of conditions for the game, which differ from the standard ones, the appearance of which is possible in the future practical activities of a specialist;
- Short time frames, the possibility of repetition of situations;
- The visibility of the consequences of the decisions taken;
- Integration of theoretical knowledge acquired by students with the practice of future professional activities, the acquisition of skills to work in the specialty and ample opportunities for individualization of training.

The game develops productive creative search thinking of students not in general, but in relation to the performance of future job duties and functions. During the training game, it is possible to reverse a decision that was unsuccessful, go back and make a different set of decisions in order to determine their advantages and disadvantages compared to those already tested. In this case, the same game situation can be played several times in order to give the students the opportunity to try different roles and offer own solutions in them.

Educational games develop and consolidate students' skills of independent work, the ability to think professionally, solve problems and manage a team, make decisions and organize their implementation. In the course of the game, students develop skills in collecting and analyzing information necessary for making decisions; making decisions in conditions of incomplete or insufficiently reliable information, assessing the effectiveness of decisions made; to conduct the analysis of a certain type of tasks; to establish links between various areas of future professional activity, etc.

In general, the use of gamification in education will help to solve the following tasks:

- To update the knowledge gained during theoretical courses;
- To teach the student to act in situations of extracurricular activities;
- To teach the student to make a decision, including in a situation of lack or inconsistency of information;
- To motivate the student to explore a difficult issue.

Unlike games in general, pedagogical game has an essential feature – a clearly defined goal of teaching and a corresponding pedagogical result, which can be substantiated, singled out in an explicit form and are characterized by an educational and cognitive orientation [8]. Thus, the essential distinctive feature of game methods is that they are based on game elements, connections, relationships. In pedagogical practice, the technology of lessons in a game form of education has been developed and applied. The main game models that are most actively used in pedagogical practice are as follows: business, organizational-activity, role-playing, imitation.

The business game is widely known to all as a kind of role-playing game. A business game represent a joint activity of a group of students and a teacher under his control in order to solve educational and professionally oriented tasks using game modeling of a real problem situation.

This type of game makes it possible to evaluate the ability to analyze and solve typical professional problems. The peculiarity of business games lies in the high emotional state of mind of its participants; a healthy spirit of competition is always inherent in them [2,4].

Considering the psychological and pedagogical principles of organizing a business game, we can summarize them as follows:

- The principle of simulation modeling of specific conditions;
- The principle of game modeling of the content and forms of activity;
- The principle of joint activity, by involving several participants in the cognitive activity; it requires the developer to select and characterize roles, determine participants' powers, interests, and means of activity;
- The principle of comprehensive collective discussion of educational material by students allows them to achieve a comprehensive presentation of professionally significant processes and activities;
- The principle of the problematic nature of the content of the imitation model and the process of its deployment in game activities.

The essence of the business game is the creative activity of the participants who need to find a problem and ways to solve it. A business game is a kind of training, 'repetition' used in an educational institution that helps to achieve a set goal.

The business game has certain capabilities that characterize it as a method of active and interactive learning [8, 22]:

- Simulated professional relationships ensure the inevitability of students' involvement in the simulated professional environment. As a subject of professional relations, a student acquires the necessary skills and abilities to correctly perform his functions, which contributes to intensive professional development;
- The emotional and creative search character of the participants' activities serves as a didactic means of developing creative (theoretical and practical) professional thinking, expressed in the ability to analyze various situations, formulate, solve and prove (substantiate) subjectively new tasks; develops the ability to effectively interact with the subjects of the educational process.

- The business game reveals the student's personal potential: he can evaluate his own capabilities individually and in joint activities with other participants.

The reality of playing situations, the mechanism of joint activity and the systems of communication and relations bring the method of business games closer to the conditions of future professional activity.

Moreover, the business game as a method includes other forms of active learning. For example, in the process of preparing it and discussing the results, methods of discussion, analysis of specific situations, actions according to instructions, parsing mail, solving professional problems, etc. are used.

Thus, on the basis of game methods, various teaching techniques are synthesized, and the effect of teaching students from the use of these techniques in combination with game means is significantly increased.

Game learning is a poorly predictable and poorly controlled process. Its course is influenced by a sufficiently large number of factors, and the 'calculation' of the mutual influences of them is very difficult: it is the situation, mood, preparation, knowledge of information and the level of knowledge of students, interest in the problem, etc. However, the systematic and purposeful use of game methods can give certain results, both in changing the basic qualities of a person, and in the effectiveness of educational activities. The game generates joy and cheerfulness, inspires students, enriches them with impressions, helps to avoid annoying edification, creates an atmosphere of friendliness in the team. In the course of the game, all the students, unnoticed for themselves, become more active, get carried away with the search for answers, begin to think, because very few people are satisfied with the position of an "outsider" in the game. The winner is most often not the one who knows more, but the one who, moreover, has a more developed imagination, who can see, observe, notice, react faster and more accurately in a game situation [11].

Playing is a teaching method, and, with its help, educational, developmental and educational tasks should be solved. Thus, when using this active method, modern education at a university will "absorb" everything new and progressive that arises in pedagogical theory and practice in order to increase the cognitive activity of students [8,15]. At the same time, it must be said that in the end, despite the practical significance, business games must be used in conjunction with theoretical studies, since namely this combination allows achieving the greatest efficiency of the learning process.

4 Discussion

The emergence of game teaching method in the educational process is determined by the requirements for increasing the effectiveness of teaching due to more active involvement of students in the process of not only acquiring knowledge, but also their direct use. Game as a method of interactive learning contributes to the solution of the following tasks [9, 19]:

- To form motivation for learning;
- To assess the level of preparedness of students;
- To assess the degree of mastery of the material and to transfer it from a passive state (knowledge) to an active one (skill);
- Students get their own experience of educational and game activities; the teachers acquire the ability to work out the skill of designing and organizing educational games;
- To activate self-education of students;
- To form a pluralism of opinions and actions, multivariance of mental operations, interest in a more effective construction of professional activity;
- To develop individual professional thinking, the ability to analyze and predict.

Practical experience of working with students shows that game methods are interactive and integrative, since they include

elements of training, and analysis of specific situations, as well as discussions - depending on the goals of the game [20].

It is obvious that the activity of both independent and collective activity of students is possible only in the presence of incentives. Therefore, among the principles of activation, a special place is given to the motivation of educational and cognitive activity. The principles of enhancing the educational and cognitive activity of students, as well as the choice of teaching methods, should be determined taking into account the peculiarities of the educational process. In addition to principles and methods, there are also factors that induce learners to be active – they can also be called motives or incentives of the teacher to activate the activity of learners.

Interest is the main motive for activating students. This factor must be taken into account already in the formation of educational material. The student will never study a specific situation if it is far-fetched and does not reflect reality, will not actively discuss a problem that has nothing to do with him. Conversely, his interest increases sharply if the material contains characteristic problems that he has to meet, and sometimes even solve in everyday life. Here, his cognitive activity will be conditioned by his interest in researching this problem, studying the experience of solving it.

The creative nature of educational and cognitive activity in itself is a powerful stimulus to cognition. The research nature of educational and cognitive activity allows students to awaken creative interest, and this, in turn, encourages them to active independent and collective search for new knowledge.

Competitiveness is also one of the main motivators for the active activity of students. However, in the educational process, this can be reduced not only to the competition for the best marks – it can also be other motives. For example, no one wants to "hit the face in the dirt" in front of others, everyone seeks to show himself from the best side (that he is worth something), to demonstrate the depth of his knowledge and skills. Competitiveness especially manifests itself in classes conducted in a playful way.

Taking into account the listed factors, the teacher can unmistakably intensify the activity of students, since a different approach to classes, and not a monotonous one, will first of all cause interest in the class among students, they will happily engage in it, since it is impossible to predict the teacher's activity. The emotional impact of the above factors on students is exerted by play, competition, creativity, and interest. Emotional impact also exists as an independent factor and is a method that awakens the desire to actively participate in the collective learning process, interest that sets in motion. Educational work, like any other, is interesting when it is diverse. Monotonous information and monotonous ways of acting can quickly become boring.

The pedagogical essence of gaming technologies is to activate thinking, increase the independence of students and ensure a creative approach to learning. The goal of the game is to form the skills and abilities of the student in an active creative search. In the process of playing activity, not only knowledge is activated, but also communication skills, which determines the social significance of gaming technology.

5 Conclusion

Considering some aspects of conducting classes in an interactive form, we can conclude that the introduction of interactive learning is one of the factors of its intensification, since such training allows to successfully achieve the goals of enhancing educational and cognitive activities, ensure the comprehension of educational material, individualize pedagogical interaction, form knowledge, skills and pronounced personal qualities of students.

With active learning, the student is rather a subject of educational activity than with passive learning, he enters into a

dialogue with the teacher, actively participates in the cognitive process, performing creative, search, problematic tasks [14]. Active teaching methods allow to successfully form the following skills: the ability to adapt in a group; the ability to establish personal contacts, exchange information; willingness to take responsibility for the activities of the group; the ability to put forward and formulate ideas, projects; willingness to take reasonable risks and make non-standard decisions; the ability to avoid repeating mistakes and miscalculations; the ability to express one's thoughts clearly and convincingly, to be laconic, but understandable; the ability to foresee the consequences of the steps taken; the ability to effectively manage own activities and time.

The game form of classes is created with the help of game techniques and situations that act as a means of motivation, stimulation of students to learning activities. When planning a game, the following should be ensured [6]:

- The didactic goal is set in the form of a game task;
- Educational activity is subject to the rules of the game;
- Teaching material is used as a medium;
- A didactic task is transferred to a game task due to the element of competition;
- Successful completion of tasks is associated with the game result.

Gamification does not mean abandoning traditional sources of information such as lectures and textbooks, but gamification is an important addition to the educational process and gives the student the opportunity to consolidate the theoretical knowledge gained in practice.

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