

## METHODS AND APPROACHES IN INTERACTIVE LEARNING

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**Abstract:** The transformations taking place at the global level bring changes to all spheres of human activity, including the educational system. The article emphasises the relevance of the use of interactive forms of education, analysing the concept of interactive learning. This article also presents the list of the main forms and technologies of interactive learning, with offering the order of the interactive classes. Among the types of work in interactive learning are following: brainstorming, interactive lesson using audio and video materials, ICT tools, round table (discussion, debate), project method, presentation, case study, business simulation games, role-playing games, such as aquarium.

**Keywords:** interactive learning, brainstorming, ICT, round table, simulation games, role-playing games, project method, active learning, case study, problem lecture, didactic games, educational process.

### 1 Introduction

Socio-economic transformations and information development of the whole world community necessitates the revision of the established traditional educational system. This trend reveals itself in the form of contradictions between the need for human's mastering of new areas of knowledge and the difficulties of their mastering in its entirety. In this regard, of current importance are the questions of development of educational system of the Republic of Kazakhstan in the context of integration into the world educational space, development of creative thinking, introduction of scientific achievements in compliance with their necessity, creating an opportunity for transforming a student into a subject of own activity. Only a specialist who obtained high-quality education is able to become an active participant in economic, social and cultural development of society.

The up-to-date issues of the educational policy of the Republic of Kazakhstan include improvement of the professional training of specialists, total updating of the scientific and methodological system of education, elaboration of forms and methods of education, narrowing the gap between the real level of specialists' training and demands from employers, ensuring the continuity of education, analysis of the foreign experience in education (Mukhametzhanova et al., 2016).

Therefore, a complex and important task of higher education consists in the optimization of the future specialists training process, development of professional skills, formation of a new system of professional orientation, preparation of competent specialists. Training such personnel necessitates activation of the educational process and development of new training forms and methods.

At present, economic theory has begun to pay more and more attention to the importance of the accumulation of human capital as one of the factors that constitute the productive forces of new methods of production in a changing socio-economic formation. Currently, dramatic and promising changes are taking place in the education system of the Republic of Kazakhstan. The transformation of socio-economic relations is taking place gradually and the development of information technologies mainly influences this process (Abykanova et al., 2020a).

As was noted by Yakovleva and colleagues (2014), there are required significant changes in the pedagogical support of the university curriculum, adding to it teaching methods which could provide the training of future specialists with the required comprehensive result. Although the traditional methods of the university educational process (lecture, etc.) are certainly important for professional development, their limitations are increasingly felt nowadays when a complex phenomenon such as competence is formed. The authors highlighted that modern education should focus on the student's independent activity, the organization of self-learning environments and experimental and practical training, where students have a choice of actions and can use initiative.

The task of a fundamentally new design of the content and organization of educational material, the pedagogical activity of the teacher and the educational work of the student in the computer environment comes to the fore in the educational system (Abykanova et al., 2020b).

As noted Pradono and colleagues (2013), comparing with the previous generations of students, the digitally-native students tend to be more active experimental learners, more proficient in multitasking and strongly dependent on communication technologies for accessing information and for interacting with others. Thus, the interactive learning methods seem to be more relevant today than ever before.

Dynamically developing market conditions necessitates rethinking of theoretical approaches related to the professional training of the youth, increasing its creative potential and competitiveness in the labour market. The solution to this global problem is determined by the implementation of a wide range of measures to improve the educational system. Interactive pedagogy has become deeply connected with such principles and trends as the technologization of the educational process, informatization, humanization, globalization of education, individualization of learning, improvement of forms of independent work, pedagogy of cooperation, the collective way of learning, etc. Obviously, the interactive form becomes a key element of the didactic structure of the lesson, which allows to organically combine seemingly irreconcilable opposites (Shumskis, 2017).

New education paradigm predetermines a change of priorities – from the traditional assimilation of ready-made knowledge during lecture and seminar classes to the independent active

cognitive activity of each student. Moreover, the student's involvement in the active cognitive process should be accompanied by the assimilation of knowledge and a clear understanding of it, where, how, and for what purposes this knowledge can be applied in future professional activities (Tulenova, 2020).

In order to update the education system and switch it to a competence-based basis, it is necessary to revise the training model itself. Three major models are identified:

- passive model: student is an object of influence, s/he listens and looks;
- active: student is a subject of learning, s/he works and gets knowledge independently and creatively;
- interactive: learning is understood as an interaction between a teacher and a student.

Undoubtedly, the transition from passive to active models is necessary, and this transition is almost completed, but the most productive is an interactive model of learning, since students, thanks to the use of this model, learn not just to apply the knowledge obtained, but also to constantly look for new, upgrade the already accumulated profession-related knowledge (Krylova, 2016).

With passive (traditional) model of training, the educational situation is often realized in the following way: "teachers expend a lot of energy preparing lectures, they must read various texts and synthesize the information, pick out the most important points and organize them in a cohesive manner, write lecture notes, and then deliver the information to students who sit passively often thinking of everything but what the teacher is saying" (Hurst et al., 2013).

This article analyses the methods of interactive learning, which shifts the focus on each student's potential and development of the cognitive skills of the future specialists.

## 2 Materials and Methods

With the introduction of a competent approach to training, the urgent task of higher education is to develop students' applied skills. The question of activating students' independence and proactiveness is one of the most important problems of modern methodology of teaching special disciplines, pedagogy and psychology. Productive work of students in the higher educational institution should form not only solid knowledge, but also the ability to use them in various situations, independently acquire knowledge, shape experience in solving problem situations. The development of independence and proactive attitude does not happen by itself, it is the result of purposeful interaction and organization of the pedagogical environment, i.e. the use of pedagogical technology. The key ones are related to the use of active or interactive learning methods.

The aim of this article is to study the learning methods that turn the classes in the higher educational institutions into more effective and productive for students. The methodological framework includes the following methods: theoretical, analysis of pedagogical and psychological literature on the studied problem; analysis, synthesis, generalization, classification of information; empirical methods.

## 3 Results and Discussion

The activation of the educational process is interpreted as the construction of such learning process, which involves the organization of the educational process on a scientific basis, creating conditions for creative thinking, research work of students, generates students' interest in their future specialty, etc.

In this regard, among the requirements for university teachers are the ability to work under new conditions, effectively use interactive methods, the ability to correctly convey their

thoughts, prove their point of view and capacity for dialectic argumentation.

The success of the educational process for students is ensured by the implementation of:

- interactive methods;
- relationships between teachers and students based on partnership and cooperation.

Given these features, an important issue today is the training of future teachers in accordance with the requirements of modernity. The paradigm of education at the world level requires the focus of education on the result, on the student's personality, the construction of learning methods based on interpersonal relationships.

The fact that Kazakhstan has chosen a democratic path of development increases the role of society in decision-making. In this area, methods that increase student activity are called interactive. These methods, which seem simple at first glance, have their own peculiarities and difficulties.

The term "interactive" means to actively interact or be in a dialogue mode with something (for example, a computer) or someone (a person) (Mierin et al., 2015).

Interactive learning is the key to active interaction between the student and student group with the teacher in the dialogue mode. This contributes to the situation when all students are involved in the cognitive process, having the opportunity to evaluate their knowledge and express their attitude to the studied objects. As emphasised Krusche with co-authors (2017): "interactive learning tightens the relationship between content delivery and problem solving in class by integrating multiple, small units of content delivery and content deepening through exercises."

In other words, the word "interactive" implies joint activities, establishing a dialogue. And "interactive learning" refers to learning based on joint communication, learning through dialogue, the relationship "teacher-student", "student-student", "self-trained" in the following formats: conversation, dialogue, discussion, joint actions (A. Subocheva, & O. Subocheva, 2014).

In the course of dialogue-based training, students learn to think critically, solve complex problems based on the analysis of circumstances and relevant information, weigh alternative opinions, make thoughtful decisions, participate in discussions, and communicate with other people. To do this, the classes are organized in pairs and groups, research projects, role-playing games are used, documents and various sources of information are processed, and creative works are used. The student becomes a full participant in the educational process, student's experience serves as the main source of educational knowledge (Kaspina, & Plotnikova, 2016).

Rütmann and Kipper (2011) emphasized that real-world activities often involve analysis, synthesis and decision-making behaviours in the cognitive domain, organization and characterization behaviours in the affective domain, and articulation and naturalization behaviours in the psychomotor domain. These behaviours are not learned by memorizing and rapidly and automatically reassembling them into a whole. Instead they must be constructed by learner's own attempts to use personal experiences and past learning to bring meaning to and make sense out of the content provided.

According to Gleason and colleagues (2011), it is important for teachers to make a transition of their concept of learning from simple knowledge acquisition, with learners memorizing by rote, toward more consequential knowledge construction with application of skills. Extending learning to include knowledge and skill applications can require a substantial change in how teachers both understand and approach the teaching-learning process. This transition moves from an instructor-centred and often lecture-based teaching format toward a learner-centred

teaching format that may include discussion and case-based applications.

The functions of a teacher in higher education are not limited to the mere transfer of scientific knowledge (using passive teaching methods), they also include the choice of an optimal teaching strategy, the use of modern educational technologies aimed at creating a creative atmosphere of the educational process (Pafifova, 2015).

Interactive learning process often involves the use of educational information technology (EIT) tools to facilitate the students' engagement and upgrade the overall process. EIT should be understood as an application of information technology to create new opportunities for transferring knowledge (teacher's activity), perceiving knowledge (student activities), assessing the quality of education and, of course, the comprehensive development of student personality during the educational process. Moreover, the main goal of educational informatisation is to train students for full and effective participation in the everyday social and professional fields of life in the information society (Abykanova et al., 2020c).

Teachers who use various IT tools are convinced that they implement an interactive approach to learning. To define a lesson with the use of interactive learning tools as interactive, that is, built on the practice of active, subjective interaction of subjects of the educational process, is just as wrong as to call a lecture, that touched upon a question of a problematic nature, a problem-lecture, as rightly noticed Korotayeva in her work (2013). Unfortunately, despite the popularity of the concept of "interactive learning", few people understand the essential characteristics of the educational process, built on interpersonal interaction, on a real, rather than virtual dialogue.

It makes sense to differentiate these phenomena in educational practice and identify four main approaches to the organization of educational activities.

1. First of all, there is still an approach that does not include either actual interactive learning or interactive learning tools. Here a student is assigned the role of a passive receiver of knowledge. Fortunately, this approach has recently been increasingly replaced by modern attitudes focused on subject-subject interaction in the educational process.
2. The second approach is based on the interactivity of the educational process, but without the use of multimedia tools: discussions, educational and cognitive dialogues, debates, communication trainings, etc. This direction is defined in didactics as an "active form of learning".
3. More often there are classes that involve the use of interactive learning tools, but without interactive learning as such, i.e. without dialogic interaction. Teacher here uses the possibilities of information and communication technologies as visual material and / or offers students to express themselves in the preparation of independent educational projects based on multimedia presentations, etc.
4. Interactive learning using interactive learning tools. This is the least studied area in modern didactics, but it should be the most popular area in terms of the theory and practice of the educational process (Korotayeva, 2013).

Interactive learning technologies imply such an organization of the learning process in which it is impossible for a student not to participate in a collective, complementary process of learning based on the interaction of all its participants. Students use personal and social capability to work collaboratively with others in learning activities, to appreciate their own strengths and abilities and those of their peers and develop a range of interpersonal skills such as communication, negotiation, team work, leadership and an appreciation of diverse perspectives (Sentham, 2018).

David and Roger Johnson (1989) distinguish five major components of the successful collaboration in the training

process: positive interdependence, individual and group responsibility, motivation to cooperate, training in interpersonal and group communication skills, and group processing of learning results. Readiness for pedagogical cooperation and the formation of motives for cooperation, as well as the ability to think and carry out their activities in a team are the main indicators of comfortable learning activities of students.

The main requirements for successful learning with interactive technology are as follows (Kupriyan, 2015):

- Positive interdependence: group members should understand that shared learning activities benefit everyone;
- Direct interaction: group members should be in close contact with each other.
- Individual responsibility: each student must master the proposed material, and each is responsible for helping others. More capable students should not do other people's work.
- Developing teamwork skills: students must master the interpersonal skills necessary for successful work, such as interviewing, assigning, and scheduling tasks.
- Performance evaluation: during group meetings, it is necessary to allocate special time so that the group can evaluate how well it is working.
- Among the advantages of interactive forms of learning based on the goals of developing learning process are the following:
  1. Formation of the ability to understand the essence of the subject being studied, the laws of its basic concepts, cause-and-effect relationships, etc.
  2. Formation of evaluating activities: self-evaluation of their activities, discussion of proposals from other students, etc.
  3. Development of cognitive abilities, i.e. all elements of students' cognitive activity: thinking, perception, memory, attention, imagination.

The difference between interactive learning methods and traditional learning methods is the use of life experience, the disclosure of personal and professional abilities through the analysis and systematization of information (Dvulichanskaya, 2011).

In the traditional system, instruction was teacher-centred and the students' needs and interests were not considered. This is when students' instruction must change into a method in which their needs are considered and as a result of the mentioned method active behaviour change occurs in them (Bidabadi et al., 2016).

Modern higher education training involves not only students' acquisition of knowledge and the formation of professional skills, but also the development of creative and communicative abilities of the individual in the process of active cognitive activity. The practical application of problem-based and developmental learning has led to the emergence of so-called active methods that combine means and forms of learning that stimulate cognitive activity and create conditions for creativity and collaboration between teachers and students.

If the classical teaching method allows evaluating theoretical knowledge more accurately, the interactive one requires evaluating the correct construction of the speech, reasoning, possession of the categorical apparatus, the desire to identify the content of concepts, the ability of students to think logically, make decisions, and offer alternatives that were previously ignored. An important factor is taking an active part in the discussion and preparing the final report on the issue under discussion (Gagach, 2012).

Through interactive methods, students master the following knowledge, qualifications, skills and abilities:

- development of critical thinking and reflective reasoning abilities;
- analysis and evaluation of own ideas and actions;

- independent understanding, comprehensive analysis and ability to select/filter information;
- independent formation of new knowledge;
- participation in discussions, defending own opinion;
- making decisions and solving complex issues.

Therefore, in the process of interactive learning, students should be prepared for the following actions:

- collaboration;
- activity in terms of perception, communication and sociality.

In the process of interactive learning, students learn to formulate their opinions, correctly convey their thoughts, justify their opinions, conduct a discussion, listen to others, respect and consider other opinions and points of view (Dvulichanskaya, 2011).

Interactive training includes the following types of work:

1. **Brainstorming:** a flow of questions and answers, or suggestions and ideas on a given topic, in which the analysis of the correctness is made after the activity.
2. **Interactive lesson with the use of audio and video materials, ICT.** For example, online tests, working with electronic textbooks, training software, and training websites.
3. **Round table (discussion, debate):** a group type of activity that involves a collective discussion of problems, suggestions, ideas, opinions by students and a joint search for solutions.
4. **Business games (including role-playing, simulation games, etc.)** are a widespread method that can be used even in elementary school. Business role-playing game is a specific type of human interaction that is aimed at simulation of a set reality providing its participants with the necessary freedom of actions within this reality. During the game, students play the role of participants in a particular situation, trying on different professions.
5. **Aquarium** is one of the types of business game that resembles a reality show. In this case, the given situation is played by 2-3 participants. Other students stay watching and analyse not only the actions of the participants, but also the options and ideas proposed by them.
6. **Project method** implies the independent development of a project by students on the topic and its subsequent defence.
7. **Presentations** are the easiest and most accessible method to use in the classroom. The method implies a demonstration of slides prepared by the students on a particular topic.
8. **Case study** have been used as learning method since the last century. It is based on the analysis of simulated or real situations and the search for a solution. There are two approaches to creating cases: American school offers a search for a single correct solution to the problem; European school, on the contrary, welcomes the diversity of solutions and their justification.
9. **Problem lecture**, in contrast to the traditional one, implies knowledge transfer that takes place in an active form. That is, the teacher does not present previously prepared statements, but only puts questions and indicates a problem. The rules are drawn by the students themselves. This method is quite complex and requires students to have a certain experience of logical reasoning.
10. **Didactic games**, unlike business games, are strictly regulated and do not involve the development of a logical reasoning to solve the problem. Game methods can also be referred to as interactive learning methods. It depends on the choice of game. Thus, popular games-adventures, performances, quizzes, humour games are techniques from the array of interactive methods, as they involve interaction of students with each other. The didactic games integrated into the lessons bring variety, joy, prevent monotony and boredom, the integration of the game as an active-participative method in the teaching-learning-evaluation process determines a greater efficiency of the lessons, reflected in the results of the students. to the development

of the inventive and creative spirit, of the thought and imagination, of the interest for lessons (Nae, 2019).

11. The basket method is based on simulating the situation. For example, a student should act as a guide and conduct a tour of a historical museum. At the same time, student's task is to collect and convey information about each exhibit.

Conducting an interactive lesson requires following a particular algorithm:

- Preliminary methodological preparation. The teacher selects a topic, situation, identifies concepts, terms, documents to be learned, and selects the appropriate form of conducting an interactive lesson that is most effective for certain group on a given problem.
- Conducting a lesson. Such a lesson includes an introduction, the main part and summing up. The teacher informs the topic and purpose of the lesson, students get acquainted with the problem situation, the goal of which is to achieve its solution, under the conditions and rules of working in groups. Since conducting such an activity should take place after the basic concepts and definitions of a given topic were learnt, based on the knowledge base available to students, the teacher should seek to the assimilation of the conceptual framework, establish the connection between the new material and that was previously learned. The lesson should be lively and interesting, but at a high methodological level. Dialogue and cooperation are the main key concepts at this stage. The lesson is conducted according to a pre-developed scenario. The specific content of an interactive lesson is determined by its type and form.
- Summing up the lesson. This stage begins with self-evaluation of students' activities, reviewing the responses of other students, and emotional evaluation of the lesson. Then the evaluation part is carried out (the attitude of participants to the content aspect of the methods used, the relevance of the chosen topic, etc.). This reflection ends with general conclusions made by the teacher.

Thus, interactive learning methods based on interpersonal relationships meet the paradigm of modern education aimed at "personal development". At the same time, interactive methods not only form the activity of perception and personal significance in learning, but also develop them.

As stressed Atanasescu and Dumitru in their work (2013), the implementation of certain modern teaching tools involves a set of skills and availability from the teacher: receptivity to novelty, teaching style adaptation, mobilisation, desire for self-improvement, reflective and modern thinking, creativity, intelligence to accept novelty and flexibility in the way of thinking.

In modern didactics, the main differences between the forms and methods of active learning from traditional ones are considered to be the following:

- compulsory activation of students' cognitive activity;
- involvement of students in intensive activities for sufficiently long period;
- independent (individual or group) search for a solution to the problem at an increased level of efforts spent;
- creating an emotional and volitional background (tension) for intensive activity;
- continuous direct and feedback links between the training system and students;
- changing the role of a teacher to the role of a manager, organizer of the educational process, consultant;
- subject-subject relations between teacher and student both directly and indirectly through the study group, study text, computer, and so forth (Kupriyan, 2015).

The principle of activity in the learning process is one of the main ones in didactics. It provides for a quality of educational activity that is characterized by a high level of motivation, a conscious need to learn knowledge and skills, active learning and

performance. Initiating and maintaining such activity is the basis for purposeful organization of the pedagogical environment, development and application of pedagogical technologies (Kruglikov, 2012).

The full list of psychological and pedagogical principles of active learning usually includes (Verbitskiy, 1991):

- the principle of simulation of specific conditions and dynamics of production in all the variety of work, social and personal relationships is the basis of active learning methods;
- the principle of game simulation of the content and forms of professional activity as a necessary condition for an educational game that performs training functions;
- the principle of joint activity as the basis of all gaming activities, implemented by involving several participants in the cognitive activity, selecting and defining the characteristics of roles, interests and means of activity, identifying and simulating the most characteristic types of professional interaction of “co-workers” in the game;
- the principle of dialogical communication. This principle is a necessary condition for the achievement of the educational goals. According to psychology, the dialogue generates a process of thinking, because in the conditions of conflicting positions and viewpoints of participants, it is necessary to find an alternative that works for everybody. Only a dialogue, discussion with the maximum participation of all the players can generate a truly creative work. Only with a comprehensive collective discussion of educational material by students can they achieve a comprehensive representation of professionally significant processes and activities;
- the principle of duplicity, which reflects the process of developing real personal characteristics of a specialist in “imaginary” gaming conditions. The developer sets two kinds of goals for the learner, reflecting the real and game contexts in the learning activity. The implementation of this principle is directly related to the motivation of the game participants. Here various types of motivation are intertwined in a complex way: collective and individual, social and professional, productive and cognitive, achievement motivation and procedural.

Hence, it is indisputable that interactive learning forms are the necessary element of today’s educational process and many education professionals and students have already assessed their advantages over using only traditional (passive) forms of teaching. Development of students’ independence, responsibility for the decisions taken and creative thinking necessary for solving non-standard problems is a priority for the present-day educational organisations.

#### 4 Conclusions

Nowadays, higher education training should provide not only for students’ passive acquisition of knowledge and the formation of professional skills, but also for the development of creative and communicative abilities of the individual in the process of active cognitive activity. The practical application of interactive learning involves active methods that combine means and forms of learning that stimulate cognitive activity and create conditions for creativity and collaboration between teachers and students. The conducted analysis showed that interactive learning methods greatly contribute to the development of student’s independent thinking activity and lay the ground for the student-teacher or student-student collaboration, and thus bringing educational process closer to the every-day communicative reality of the future specialists when they will be required to seek solutions through teamwork. During such interactive classes, students share their knowledge and opinion, jointly developing the right solutions. The interactive learning forms increase students’ motivation and thus enhances the productivity of the educational process. Therefore, successfully combining the traditional and interactive learning methods increases the involvement of students into the learning process and contributes to the development of students’ independence.

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**Primary Paper Section: A**

**Secondary Paper Section: AM**