

# AREAS OF APPLICATION OF EDUCATIONAL GAMING TECHNOLOGIES AT DIFFERENT LEVELS OF PROFESSIONAL EDUCATION

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## Abstract:

In the modern world, the individuality of a person who freely adapts to the conditions, the changes of which are sometimes outside the logical chain of predictable events, is in the foreground. In this situation of educational development at all levels of education, including vocational education, game technologies are in maximum demand. To date, only separate points of application of game-based educational technologies within the framework of vocational education have been developed. Therefore, it is necessary to develop a comprehensive system for the application of game forms and technologies of programs within training and extracurricular activities of students in higher education and trainees of professional development and professional retraining courses in additional vocational education. The application of game-based educational technologies will enhance the efficiency of professional education and training activities, as well as personal self-determination and self-development of students. The purpose of the study is to identify the target orientation of the application of game educational technologies at different levels of vocational education. As a result of the study the directions of the use of game educational technologies in the system of professional education were determined. The most preferable types of game technologies and their orientation for different levels of professional training were identified. The materials of the study can be applied in the practice of teachers of higher education at the undergraduate and graduate levels, as well as in the system of additional professional education.

**Keywords:** professional pedagogical education, professional training, game educational technologies, undergraduate, graduate, additional professional education.

## Introduction

Intensification of modern social life leads to an increase in the dynamism of all processes of human activity. This imposes a negative impact on the emotional and physical state of the person, leading to the development of stress and depression. The learning process is no exception. The increase in the dynamism of learning and teaching activity is felt by all participants in the educational process (Palchevsky, 2015; Akhmadieva et al., 2018, 2021; Tugun et al., 2020; Borisova, Volovikova & Zhuravlev, 2020; Zheltukhina et al., 2020; Chistyakov et al., 2021).

In modern professional education there is an active search for means, methods and technologies that can "unload" the educational process emotionally, while not reducing its effectiveness. The problem-situational form of educational process organization in the mode of full-time, distance and mixed learning, where the individuality of a person freely adapting to the conditions, whose changes are sometimes outside the logical chain of predictable events (Koshman, 2011; Lebedeva et al., 2018), is currently being introduced in professional education. In this situation of educational development, the game technologies developed by such section of pedagogical science as game pedagogy are in maximum demand. The application of game technologies in professional pedagogical education promotes both reflexive self-actualization and self-determination of future teachers in relation to professional activity, and the organization of search and reflexive activity, disclosure of creative potential of teachers already carrying out professional activity (Neverkovich, Arifulina & Bystritskaya, 2018; Stukalova et al., 2018; Knyazev & Lopatinskaya, 2003; Mandel, 2017; Moroz et al., 2021).

In the system of modern higher education, where both information-cognitive, subject-target and problem-situational forms of educational process organization coexist, each of them performs independent functions in relation to the formation of components of professional culture (Dmitriev, 2014). However, recently, due to the declining importance of information-transmitting function of a teacher, the subject-target and problem-situational forms coupled with the use of active teaching methods game technologies,

have become more and more significant in the educational process of higher education institution, because in the process of their application, which was proved by numerous studies, all these components of professional culture of a future teacher are developing (Derzhavina et al., 2021).

Thus, the subject-target form of organizing educational games allows to integrate the student into the system of future professional activity and based on understanding of future professional positions to acquire a professionally meaningful personality. About the reflexive culture of future teachers' thinking, the game educational technologies implemented in this form perform the functions:

- identifying and structuring the system of professional and personal goals, meanings, motives;
- orientation of thinking on polypositional analysis of professional activity in accordance with the complex of generalized tasks of professional activity;
- development of critical thinking, aimed at oneself, the subject, and the situation of the future professional activity and, on this basis, formation of a different attitude to the professional activity and to oneself in the process of this activity
- development of adequate requirements to oneself based on correlation of social requirements to a modern specialist and one's own inclinations, needs, abilities, preferences, and development on this basis of a set of acts of self-management.

In the context of the culture of project thinking, which is naturally interconnected with the culture of reflexive thinking, game technologies enable students to:

- form readiness to accept and place in the system of knowledge fundamentally new information;
- Develop motivation to get involved in objectively new activity, as a rule, jointly, which implies the whole palette of relations from cooperation, mentoring, tutoring to competitiveness;

- improve leadership qualities and managerial skills;
- to connect theory with practice within the framework of the solution of a set of coordinated professional tasks and to develop on this basis the professional foresight of the dynamics of the states of the phenomena being studied and transformed;
- methodologically competently use interdisciplinary links when solving complex problematic professional situations, through creative activities based on the processes of imagination, fantasy and improvisation;
- develop varied programs of development of the transformed project within the framework of the proposed norms with the use of available resources;
- to develop criteria for determining the social significance of the results and products of pedagogical projects.

Thus, game technologies, implemented within the subject-target form of educational process organization, are:

- obligatory productive joint creative activity of the teacher and students to form a set of tasks actualizing different aspects of the studied process or phenomenon;
- students' working hypotheses and actualization of the range of ways to solve future professional tasks within the framework of learning activities;
- high level of feedback, contributing to the efficiency of self-diagnostics of students' abilities and timely prediction of their development situation, as well as flexible response to their needs in relation to changes in their developmental educational trajectory.

### Methodological Framework

The system of game-based educational technologies in the structure of professional training developed by the authors is based on the following approaches:

- personality-activity approach,
- acmeological approach,

- axiological approach,
- competence-based approach.

The personal and activity approach allows us to study not only the objective regularities of professional education subject's development, but also to study and implement his/her individuality in different spheres of professional activity through game activities.

The acmeological approach allows considering the subject of cognition and transformation as a creator of individual trajectory of own professional and personal development in interaction with the environment, culture, social processes, including the global nature (Bystritskaya & Dmitriev, 2011; Khozyainov, Kuzmina & Varfolomeva, 2007).

The axiological approach allows to consider the value system of a professional as a mechanism of formation and reproduction of value orientations in the process of game technology application. In this sense, game technologies contribute to the formation of wide context thinking of a future professional on the basis of humanistic values.

The competence approach in education allows to develop professional orientation of students based on creating in them an interdisciplinary idea of professional activity through the application of pedagogical game technologies (Verbitsky, 2013).

One of the main points in the development of the system of game-based educational technologies application in the structure of professional education is the determination of target benchmarks of games application in the structure of specialist training.

Thus, the purpose of the article is to identify the target orientation of game educational technologies application at different levels of professional education.

### Results

Game technologies in the system of professional teacher training open up opportunities for exploratory, reflective and creative activities for the teacher and students (Neverkovich, 1988).

Professional teacher training forms two groups of competences in students: so-called "hard" (or hard-competences) and "soft" (or soft-competences), based on which professional activity is carried out. Hard competences, which are essentially in-depth fundamental knowledge and skills in a narrow professional area are reflected in the subject knowledge and are formed in the process of subject-disciplinary training. Whereas soft competences represent the basis for successful actions in the extensively expanding educational and life space of a teacher. Their content covers different spheres of professional activity, education, social interaction, and everyday self-organization of a teacher. Soft skills are reflected in interdisciplinary knowledge and are formed in the process of interdisciplinary and meta-disciplinary training (Ivanova et al., 2019; Neverkovich et al., 2019).

Game technologies used in professional education allow the formation of both hard and soft competencies. Game technologies allow learners to actualize their individuality and consciously manage the development of their professionalism. Game reveals a different scheme of intellectual and emotional perception, representing a complex cognitive and semantic process connected with identification of a personality, social groups, with polypositional projections of the world in oneself and oneself in the world, oneself in another and another in oneself, with attribution

mechanisms, affecting deep structures of individuality.

Primarily, the inclusion of game technologies in the educational process of future teachers is carried out to introduce students to the space of game technologies focused on professional activities, and already at later stages of professional education for the preparation of game pedagogue - a person capable of designing and implementing games for the tasks of professional education (Bystritskaya, Neverkovich & Voronin, 2017). The content of game technologies varies depending on the tasks of the stage and type of professional education and develops from games, in which the main content is a subject activity, which is mostly hard competences, to games reflecting relations between people, and, finally, to games, in which the main content is obeying the rules of social behavior relations between people, where soft competences are formed.

Table 1 shows the actual types of game technologies, the application of which in the process of professional education at different stages of professional education (from pre-university professional training to training in the system of additional professional education) will reduce the load on the participants of the educational process, while not reducing the effectiveness of forming professional competencies.

**Table 1.** Specifics of implementation of game technologies of different types in the process of professional development of a teacher

Type of game technology	Level of professional education	The purpose of game technology	Examples of games
Didactic games	Pre-university education, universal baccalaureate	Formation of an image of professional activity, immersion in the environment of professional development	"Q&A", "My position".
Contextual business games	Bachelor's degree, Master's degree	Formation of polypositional perception of professional activity, "trying on" professional positions in different conditions of the educational process and professional activity	"Pedagogical Council", "Assignment of the task to the student".
Organizational and educational	Bachelor's degree,	Actualization and development of	"What happens

games	Master's degree	personal and professional potential	if...?" "The Mediator."
Organizational and pedagogical games	Bachelor's degree, master's degree, additional professional education	Formation and development of various types of professional and pedagogical culture of the teacher, the development of types of pedagogical activity and professional and pedagogical thinking	"Conference", "Designing the Health-Forming Space of the School".
Organizational and activity games	Master's degree, additional professional education	Development of thought activity based on multiprofessionalism	"Organization of professional development courses,  "Strategies for the development of the sphere of physical education and sport in the region".

As can be seen from the table, at each level of vocational education the use of game technologies is designed to solve certain problems. In this case, at the earliest stages of inclusion of game technologies in the space of professional education students begin to analyze and identify for what professional and personal problems can be used those or other game technologies. During such training students form the fundamentals of directorial skills, and there is a disclosure of creative abilities, and orientation of figurative thinking and imagination in the sphere of professional activity. Students form the readiness to design and implement games in their own professional activities, that is, the formation of the student as a game pedagogue begins.

All presented games have a didactic orientation, as students included in the game master new directions of future professional activity. Moreover, in the process of the game students learn both in a resultative (and the result remains with them) and procedural way, the abilities of inductive and deductive reasoning are developed, their own professional positions are developed or actualized, the self-determination in professional activity takes place.

At the first stage of the game-pedagogue training didactic games are used. One of such games is "Q&A". Applying this game, it is

possible to solve a set of tasks related to the possibility of "trying on" professional positions, immersion into the environment of professional development, teaching new elements of professional activity. The themes of this game may be training and educational, developing areas of professional activity, professional positions of a teacher, innovations in professional activity and others.

Within the framework of this game an educational dialogue can be organized, using the formats of educational discussion, brainstorming, "fishbowl" or "square" technologies. The form of the game is chosen depending on the planned result. So, for example, the educational discussion is suitable for the development of a joint solution to answer the set question, forms the skills of teamwork, the ability to argue one's position. The organization of a game on technology "square", can be applicable to preparation for team-building activities. The format of organization "Fishbowl" is applicable when it is necessary to work out ways of solving a real situation, for example, when using innovations in the educational process. When it is necessary to develop a new pedagogical idea, a brainstorming game is suitable.

As shown above, even such a simple game can solve many professional training tasks and can be used as an example to master many game

techniques as well as to form professional positions.

## Discussion

As it was mentioned above, the target basis for the application of game-based educational technologies in professional education is the formation of hard and soft competences. For students of each field of study game educational technologies contribute to the formation and development of an individual set of hard and soft competences, which is determined by the requirements of state educational training standards and individual personal professional qualities of students

Let us consider the main components of the portfolio of professional competencies of graduates of pedagogical training areas. These competencies represent a set of skills and abilities of a teacher, which determine the conditions for increasing the level of personal effectiveness in a dynamically changing educational environment. They can be conditionally divided into several groups:

1. Intellectual and cognitive competences. According to G.P. Shchedrovitsky (2009), these are thinking activity skills, among which are knowledge management, actualization of properties of own thinking processes, stable ideas about the indicators of their own zones of actual and nearest development. In S.V. Dmitriev's (2011) transcription, "the depth and truthfulness of cognition of the object directly depends on the extent to which by thought-action and practical actions a person has transformed the object, which turns all new facets to the subject" (Dmitriev, 2011; Dmitriev & Bystritskaya, 2012). In this, professional competencies ofgnoseological orientation are akin to cognitive learning activities, the development of which is directly mentioned in the federal state educational standards.

It should be noted that both phenomena and processes of future specialist's professional activity and his/her own trajectory of educational development can be the object of cognition and transformation. In this case the following soft competences become important.

2. Competences of self-regulation and self-control. They grow out of regulatory learning activities and are reflected in self-regulation of all life and professional resources of a teacher: his administrative preferences, his formal status and image characteristics, etc. Successful formation and implementation of this group of competences helps a teacher not only to control his time and other resources effectively, but also to actualize the signs of professional burnout (knowledge and emotional-volitional), as well as to prevent it in time. The formed competences of self-regulation of a teacher help to increase the activity on formation of motivation to classes in students (Chelnokova, Agaev & Tyumaseva, 2018).

3. Organizational and managerial competencies are focused on organizing students' activities based on the principles of two approaches: task-based (Neverkovich, 1995) or problem-based (Anisimov, 2011). If the first one describes a logical course of management in line with the educational mainstream familiar to all subjects, the second one instructs a teacher to create and solve, together with students, educational and practical problems, to initiate an absolutely new activity for them, which is comparable with crisis management.

An important place in these competences belongs to the skills of goal setting when the goal is understood not in a general form, but in the entirety of properties necessary for formation, and has an indication of the criteria and methods of measuring the result. In this group of competences, the individual style of management and activity is also brightly manifested. It should be remembered that the administrative management style inherent in the interaction in the system "teacher-student" is not always effective, and the teacher should be able to develop and apply in his work and in life management decisions of a democratic plan. It should also be remembered that in some cases of the learning process the best strategy is to step back and allow students to express their creativity, their self-management competencies.

A noticeable place in the process of formation and implementation of these competences has the emotional and psychological climate of making and implementing managerial decisions, so in the circle of skills of this type is

important the ability to choose and implement methods of motivation and stimulation. Often, as research in the field of higher physical education and pedagogical education shows (Burkhanova et al., 2020; Vorobyov et al., 2021), indirect guidance with the help of sports team leaders, using the force of collective influence on the individual, based on mentoring models ("near", "together", "follow me"), based on mentoring by more skillful athletes, is more stimulating for students than direct guidance by the coach.

In addition to these skills, this group includes the ability to manage project activities and change teams, delegation of authority, and the choice of forms and methods of reflection of activities. Reflexive-evaluative skills are directly related to the skills of goal setting. For both types of skills, it is necessary to develop one's own style of working with information: its search, analysis, and synthesis, typologization and generalization, as well as adaptation to the content of activity and transformation in connection with the dynamic change of the tasks of professional activity. It is also important to develop skills of forecasting situations of development of educational activities of both individual athletes and teams, clubs, and federations of the sport. This is necessary in order not to miss a sensational period of development of a certain significant process, function, or phenomenon. Reflexive skills proper include the ability to describe a set of desired properties of the result or product of an activity, to develop a criterial base for their evaluation both during the process of their formation and at the end of this process; to form a monitoring complex, conduct diagnostics, and analyze the data obtained.

If we consider the relationship between hard and soft managerial competences, it becomes obvious that for a teacher to successfully lead the development of personality and activity of a student, as well as the team, it is necessary, firstly, to have subject-specific training in psychology, management theory, theory and methodology of professional education, pedagogy of cooperation and conflictology. Secondly, game training is necessary, which will allow the teacher to manage cooperation and rivalry more effectively in the broad sense as important regulators in the process of development of any personality. At the same

time, the results of cooperation and rivalry lead to complementary results, namely - stress resistance and competitive ability of the learner - on the one hand, and humanistic orientation, ethical principles, value orientations - on the other hand.

4. Communicative competences may be logically divided into three subgroups of skills: logical-informative, speech-intellectual, and emotional-expressive. So, the first group includes the skills of presenting information in verbal and non-verbal form; constructing a statement according to the laws of logic; using inductive and deductive arguments; deducing and presenting a sufficient basis; reproducing unambiguously interpreted theses, etc. These skills can be useful both when organizing a game, explaining the rules, and when conducting it, in dealing with conflict situations, and in determining the outcome of the game.

The second group of skills relates to the positions of networking, when within a game dialogue a teacher first asks about the purpose of his statement, and not about its reasons (why, and not why I say so). It is in this stance that the key to successful teamwork in games. Pedagogical communication of the teacher in the game is polysubjective and semi-subjective, so it requires quick and deliberate speech reactions based on critical thinking. This group of competencies will have implementation in the construction of practices of positive parenting, in the construction of interaction of the teacher, parents and children (Burina & Kudinova, 2020; Kochneva & Grishina, 2019).

The third group of communicative competencies reflects the purposefulness of the teacher's emotional impact on the players in the interests of the game and solving the tasks set in the game. In this regard, it is necessary to manage the emotional plan of communication and activity of the participants of game interaction, developing in yourself pedagogically artistry, coupled with reflexive skills.

## Conclusion

The application of game educational technologies in educational practice, considered through the prism of progressive reasonable

development of the person and anthropic educational paradigm, allows to see more and more various possibilities of application of game technologies in professional education. The result of application of pedagogical game technologies is achieved by systematic work on condition of acceptance by participants of educational process of game as means of development and mastering by teachers of bases of game-technical pedagogical professionalism.

Practice of development and application of game technologies in preparation of pedagogical staff showed the importance and effectiveness of their application for formation of hard and soft competences and pedagogical professionalism in the learning process, as well as in determination of optimal ways of development in independent professional activity. Application of game technologies at different stages and in different forms of professional education promotes subject identification, his/her self-determination in the system of own ideas about the world and himself/herself, about his/her potential, often not actualized possibilities, about the meaning of personality and meaning of activity.

### Recommendations

In the conditions of modernization of education game educational technologies should be applied in the process of formation of both hard and soft competences. However, the use of game has a more positive effect on the formation of soft competences of intellectual and cognitive plan, organizational and managerial nature, self-regulation and self-control and communicative competences.

As a methodological basis for the application of game-based educational technologies as the basis for technological support of interdisciplinary training of specialists and formation of their professional competence portfolio, it is necessary to apply personal-activity, acmeological, axiological, competence-based approaches in professional education.

At the initial stages of professional education game educational technologies can be used to form an image of professional activity, immersion into the professional development

environment, formation of polypositional perception of professional activity, "trying on" professional positions in different conditions of educational process and professional activity. At the level of a master's degree and within the framework of professional development - for actualization and development of personal and professional potential, development of various types of professional culture, development of types of pedagogical activity and professional thinking, development of thought-activity.

The results of the study in their work can be used by teachers at universities that train specialists and teachers of professional development courses.

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