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Development of project activities for teachers and students of the education system

Desenvolvimento de atividades de projeto para professores e alunos da rede de ensino

Desarrollo de actividades de proyectos para docentes y estudiantes del sistema educativo

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Abstract: The main purpose of the article is to identify and analyze the main mechanisms for the development and improvement of project activities for teachers and students of the education system and a brief analysis of the content and structure and determination of an important condition for the development of pedagogical activities in connection with project activities. Changes in social life taking place in our time require the development of new methods of education, pedagogical technologies dealing with the individual development of the individual. It is necessary to develop students' ability to think independently, to acquire and apply knowledge. This is due to the introduction of methods and technologies into the educational process based on the design and research activities of students. To achieve this goal, it is necessary to highlight the essential attributes of activity, analyze various interpretations of project activities and concepts similar in content to it, determine the components of pedagogical activity, make a comparative analysis of pedagogical and project activities and prove that project activity is a condition for the development of pedagogical activity. As a result, the main mechanisms and techniques for the development and improvement of project activities for teachers and students of the education system were analyzed and investigated.

Keywords: Competence-based approach, Pedagogical activities, Pedagogical technologies, Pedagogy, Teachers and students.

Resumo: O objetivo principal do artigo é identificar e analisar os principais mecanismos de desenvolvimento e aperfeiçoamento das atividades de projeto para professores e alunos do sistema de ensino e uma breve análise do conteúdo e estrutura e determinação de uma condição importante para o desenvolvimento da pedagogia. atividades relacionadas com as atividades do projeto. As mudanças na vida social que

ocorrem em nosso tempo requerem o desenvolvimento de novos métodos de educação, tecnologias pedagógicas que lidem com o desenvolvimento individual do indivíduo. É necessário desenvolver a capacidade dos alunos de pensar com independência, de adquirir e aplicar conhecimentos. Isso se deve à introdução de métodos e tecnologias no processo educacional com base na concepção e nas atividades de pesquisa dos alunos. Para atingir este objetivo, é necessário destacar os atributos essenciais da atividade, analisar várias interpretações das atividades do projeto e conceitos semelhantes em conteúdo, determinar os componentes da atividade pedagógica, fazer uma análise comparativa das atividades pedagógicas e do projeto e comprovar esse projeto a atividade é condição para o desenvolvimento da atividade pedagógica. Como resultado, foram analisados e investigados os principais mecanismos e técnicas de desenvolvimento e aprimoramento de atividades de projeto para professores e alunos da rede de ensino.

Palavras-chave: Abordagem por competências, Atividades pedagógicas, Pedagogia, Professores e alunos, Tecnologias pedagógicas.

Resumen: El propósito principal del artículo es identificar y analizar los principales mecanismos para el desarrollo y mejoramiento de las actividades del proyecto para docentes y estudiantes del sistema educativo y un breve análisis del contenido y estructura y determinación de una condición importante para el desarrollo de la pedagogía. actividades relacionadas con las actividades del proyecto. Los cambios en la vida social que tienen lugar en nuestro tiempo requieren el desarrollo de nuevos métodos de educación, tecnologías pedagógicas que se ocupen del desarrollo individual del individuo. Es necesario desarrollar la capacidad de los estudiantes para pensar de forma independiente, para adquirir y aplicar conocimientos. Esto se debe a la introducción de métodos y tecnologías en el proceso educativo basados en las actividades de diseño e investigación de los estudiantes. Para lograr este objetivo, es necesario resaltar los atributos esenciales de la actividad, analizar diversas interpretaciones de las actividades del proyecto y conceptos similares en contenido, determinar los componentes de la actividad pedagógica, hacer un análisis comparativo de las actividades pedagógicas y del proyecto y demostrar que el proyecto La actividad es una condición para el desarrollo de la actividad pedagógica. Como resultado, se analizaron e investigaron los principales mecanismos y técnicas para el desarrollo y mejoramiento de las actividades del proyecto para docentes y estudiantes del sistema educativo.

Palabras clave: Actividades pedagógicas, Docentes y alumnos, Enfoque por competencias, Pedagogía, Tecnologías pedagógicas.

INTRODUCTION

The relevance of student involvement in the project management of the development of the university is determined by a number of reasons. Firstly, it is the quality of professional training of the future bachelor or master. A university graduate is one of the key products of the activities of educational institutions of higher education. The quality of his professional training is determined by the competitiveness of graduates. Trends in this direction are created by the labor market. At present, as already noted, many areas of professional activity are focused on an independent, competent employee who knows how to work in a team, who has experience in project activities. Consequently, quality professional training today is about providing the student with the opportunity to participate in the management and implementation of projects.

This issue is of particular relevance in relation to students - future teachers. This is due to the fact that many of the labor functions of a

teacher, recorded in the Professional Standard, correlate with the content of project activities and project management.

The project activity has several interpretations. With all the variety, they contain a link to the result and its assessment.

They can be:

- obtaining a socially useful product;
- the creation of something good, kind, eternal;
- the creation of a new thing, which was not there before;
- improvement and harmonization of their environment and the world as a whole.

The project as a way of forming the cognitive activity of students, acts as a tool for students to achieve competencies and competence, since it involves the development of search and analytical abilities, skills in action planning, analysis and evaluation of results. Let's turn to the dictionary: project from lat. projectus - "thrown forward", plan. "

It is the plan, concept, targeted actions aimed at solving certain problems arising in the course of educational activities, the solution of which with the participation of both teachers and students will allow us to achieve an understanding of quality as an agreement of goals and results.

From the point of view of the teacher and the administration, the project has a managerial character in the system of achieving the quality of education, which consists of (Koper, Bennett, 2008):

- in understanding the meaning of stimulating and supportive pedagogical actions aimed at achieving efficiency and quality, not only in stating the facts, but at preventing undesirable results and correcting the causes and problems arising on the way to achieving the quality of educational activities;
- project activities can and should act as a quality management tool, a tool for influencing the quality of educational activities by means of a mechanism for identifying and analyzing problems and determining an action plan to resolve them;
- a project as a management tool can perform a diagnostic function through the identification and timely prevention of problems on the way to achieving quality by the implementation of the project.

Target projects in the system of creating conditions for achieving the quality of educational activities are to a certain extent unique and solve the problems of a particular educational institution, are aimed at achieving specific goals, contain a time parameter (can be short-term and long-term depending on the complexity of the problems to be solved), suggest coordination of the efforts of all participants in the educational process, are developed according to a specific algorithm (problem, goal, activities, criteria and performance indicators, analysis of results, identification of unsolved problems, a new target project).

Competently formulated goals are a special condition in the process of developing a target project in the system of creating conditions for achieving quality. Work on a project begins with setting goals. It is the goals that are the driving force behind each project, and all the efforts of its participants are aimed at achieving them. Among other things, supported

by criteria and indicators, they can be benchmarks for achieving quality. The experience of organizing project activities as the basis for a system of in-school quality control of educational activities has shown that within the framework of the project it is possible to solve various problems that arise on the way to achieving the quality of educational activities (Kademia, 2018).

For example, increasing the cognitive activity of schoolchildren as the basis for achieving the quality of educational results; increasing the effectiveness of educational work at school; improving the system of language education for schoolchildren and others. A variable approach to the definition and development of ways to achieve competencies and competencies of students as indicators of the quality of education, a change in educational paradigms and initiatives, as a natural movement towards a more holistic understanding of the phenomenon of education itself. In the context of the competence-based approach in the process of achieving quality, a new system of methods for organizing the educational process is being built, it becomes practice-oriented and is built on partnership relations between students and teachers that ensure the activity-oriented nature of education. The method of projects in the educational activities of the school can take a well-deserved place in the system of achieving the quality of educational activities, along with others.

METHODOLOGY

The main purpose of the article is to identify and analyze the main mechanisms for the development and improvement of project activities for teachers and students of the education system and a brief analysis of the content and structure and determination of an important condition for the development of pedagogical activities in connection with project activities. For this, a number of methods were applied, which form the research methodology. The study was carried out using the following theoretical methods: systems analysis and synthesis, induction and deduction, comparison, classification, generalization and systematization, idealization and abstraction.

RESULTS AND DISCUSSION

The project method is a set of educational and cognitive techniques that allow you to solve a particular problem as a result of independent actions of students with the obligatory presentation of these results.

The project method is an innovative pedagogical technology that carries search, problematic methods that are creative in nature.

The project method is based on the development of students' cognitive skills, the ability to independently design their knowledge and navigate the information space, the development of critical thinking.

This is a way to organize the process of cognition and a way to achieve a goal through a detailed development of the problem, which should end with a very real, tangible practical result.

- the purpose of project-based learning is to create conditions under which students: independently and willingly obtain the missing knowledge from different sources;
- students learn to use the acquired knowledge to solve cognitive and practical problems;
- acquire communication skills by working in different groups;
- develop their research skills (the ability to identify problems, collect information, observe, conduct an experiment, analyze, build hypotheses, generalize); develop systems thinking.

The teacher's task is to find ways of using design that would attract students with different levels of knowledge, abilities and skills to this activity, position them for common joint activities, and activate their interest in the profession. For example, the work of students with different levels of knowledge in a team, where the leading role is played by a more prepared student, which is very important for the training of specialists in the construction profile.

It is possible to determine the professional competence of a teacher only in relation to a specific educational system in which the teacher works or will work. Any system imposes its own restrictions on the activities carried out in it. Therefore, it is not worth talking about the competencies of a teacher in the traditional educational system, focused on the assimilation of subject educational knowledge, presented as the basis of sciences. It is necessary to talk about the competencies of the teacher, necessary for him to work in the general education system or the system of higher education, built on a competence-based basis. The basic competence of a teacher lies in the ability to create, organize an educational, developmental environment in which it becomes possible to achieve the student's educational results, formulated as key competencies. All other more specific competences follow from the general one and are its constituent parts. Among them, the following competencies can be distinguished (Eliyana, Ma'arif, Muzakki, 2019):

1. To be able to define goals and educational results in the language of skills (competencies).
2. Be able to include students in different types of work and activities in accordance with the intended results, taking into account the inclinations, individual characteristics and interests.
3. To be able to use a variety of techniques and methods of including a student in different types of activities, allowing him to develop the required competencies.
4. Be able to notice the student's inclinations and, in accordance with them, determine the approximate direction of his development.
5. Be able to organize and manage group project activities of students.
6. To be able to take an expert position regarding the competencies demonstrated to students in different types of activities and evaluate them using the appropriate criteria.

7. To be able to reflect on their activities and their behavior in the course of training sessions and correct them.

8. To be able to organize a discussion and participate in it, realizing that your own point of view can also be subject to doubt and criticism.

9. Be able to create an atmosphere in which students would like to express their doubts, opinions and points of view on the subject under discussion, even if they differ from the existing ones.

This list is fundamentally open, and everyone can add those skills that he considers most important to achieve certain educational results.

The competence-based approach in modern education is a problem. Two opposing points of view on the essence of this concept stand out clearly. One of them is that "the concept of competence does not contain any fundamentally new components that are not included in the scope of the concept of "skill"; therefore, all the talk about competence seems somewhat artificial, designed to hide old problems under new clothes. "

The opposite point of view is based on a completely intuitive idea that it is the competence-based approach in all its senses and aspects that most deeply reflects the main aspects of the modernization process.

It is within the framework of this attitude that statements are made (Iqbal, 2020):

- the competence-based approach provides answers to the needs of the production sector;
- the competence-based approach manifests itself as a renewal of the content of education in response to the changing socio-economic reality;
- a competence-based approach as a generalized condition for a person's ability to act effectively outside of educational plots and educational situations;
- competence appears to be a radical means of modernization;
- competence is characterized by the ability to transfer the ability to conditions different from those in which this competence originally arose;
- competence is defined as "the readiness of a specialist to engage in a certain activity" or as an attribute of preparation for future professional activity.

Meanwhile, there are a number of problems in the vocational education system, which, without formally affecting the essence and structure of the competence-based approach, obviously affect the possibilities of its application. Among them (Jandri et al, 2018):

- the problem of a textbook, the possibilities of their adaptation in the conditions of modern humanistic ideas and trends in education;
- the problem of the state standard, its concept, model and possibilities for a consistent definition of its content and functions in the conditions of Russian education;
- the problem of the qualifications of teachers and their professional adequacy not only to the newly developed competence-based approach, but also to much more traditional ideas about professional and pedagogical activity.

Thus, the discussion of the competence-based approach is immersed in a special cultural and educational context set by the following trends in Russian education in recent years (Hanke, Ifenthaler, Seel, 2011):

- the loss of unity and certainty of educational systems, the formation of the labor market and the associated market for educational services;
- variability and alternativeness of educational programs, increasing competition and commercial factor in the activities of the educational system;
- changing the function of the state in education: from total control and planning - to the general legal regulation of relations arising in education;

However, even accepting and considering all these aspects, the phenomenon of the competence-based approach does not acquire clearer features. On the one hand, it is quite obvious that the modern economy is focused on personnel, which far exceed the educational indicators of most graduates of higher education.

It is also obvious that more significant and effective for successful professional activity are not isolated knowledge, but generalized skills, manifested in the ability to solve life and professional problems, the ability to communicate in a foreign language, training in the field of information technology, etc. Half a century appears to be a full of dramatic struggle against the dogmatic memorization of concepts, rules and principles, as a result of this struggle, all the concepts known today have arisen, including algorithmization, the gradual formation of mental activity, developmental and personality-oriented learning.

It is possible to formulate some generalized image of the most significant elements of the competence-based approach in domestic pedagogy (Table 1) (Kovalevskaja, Gilyazeva, Lobazova, Duborkina, Sokolova, 2021).

Table 1
The most significant elements of the competence-based approach in domestic pedagogy.

In this regard, educational competencies are differentiated at the same levels as the content of education (Küçükgöz, 2021):

- key (implemented on metasubject content common to all subjects);
- general subject (implemented on the content, integrative for a set of subjects, educational area);
- subject (formed within the framework of individual subjects).

5. Formulations of key competencies and their systems represent the greatest range of opinions; at the same time, the European system of key competencies is also used, which include value-semantic, general cultural, educational and cognitive, informational, communicative, social and labor competencies and the competence of personal self-improvement.

Several groups of significant contradictions emerged, including (Gruzdeva, Prokhorova, Chanchina, Chelnokova, Khanzhina, 2018):

1. The discrepancy between the initial practical orientation of the competence-based approach and the existing subject (including metasubject) orientation of pedagogical practice.

2. Uncertainty of the conceptual and innovative potential of the competence-based approach, in particular, the lack of clarity of the fundamental differences between the latter and the existing psychological-pedagogical concepts of an activity-based and developmental orientation.

3. Lack of subject and age correlation of the competence-based approach, as well as organizational and managerial aspects of the implementation of the competence-based approach.

4. The vagueness of the national-cultural, socio-political and, finally, the socio-psychological context of the development of standards and the implementation of the competence-based approach in it.

To solve this problem, it is necessary to refer to the experience of implementing the competence-based approach in Western Europe and the United States.

Let's dwell on a few of the most significant and meaningful differences (Marek et al, 2020):

1. The competency-based approach is seen as a dialectical alternative to the more traditional credit approach, focused on the rationing of meaningful units. Accordingly, the assessment of competencies, in contrast to examination tests aimed at identifying the volume and quality of acquired knowledge, presupposes the priority use of objective methods for diagnosing activities (observation, examination of products of professional activity, protection of educational portfolios, etc.).

2. Competence itself is viewed as "the ability to solve problems and readiness for their professional role in a particular field of activity." Accordingly, competence is presented, first of all, by employers and society in the form of some specific expectations related to the professional activity of a graduate. Moreover, it is the level of compliance of individual indicators with the expectations of the employer and society that is considered as the main indicator of competence.

3. The leading concept of the competence-based approach is the "educational domain", while the final competence is represented by a set of such domains, and each domain is formed as a specific function of future professional activity. Hereinafter, each of the domains is concretized at two or more levels. In particular, at the next level, activities and problems are highlighted for the solution of which graduates should be prepared (creating systems, assessing achievements, planning results, etc.). At the next level, the individual actions and properties required for successful activity are clearly recorded: to define, interpret, compare, develop, implement, integrate, control, etc. At the conclusion of the description of competencies, as a rule, scales are given on which standard levels of professional competence are marked.

4. The description of competencies necessarily includes a normative model of diagnostic procedures that allow practically organizing certification procedures. Within the framework of the model, the

status and conditions for the application of all control methods are determined, including: testing, writing essays and presenting educational portfolios, examination of practical activities, the procedure for writing and defending certification works.

5. The most significant and remarkable feature of the competence-based approach is the authorship of the corresponding models: it belongs to non-state associations (federations, committees) that coordinate professionals in the respective spheres of professional activity. Accordingly, the very problem of the competence-based approach takes on a different institutional expression: we are talking about a system that makes it possible to fairly objectively assess the suitability of each individual applicant for future activities, as well as to develop clear criteria for the quality of this activity, allowing future employees to carry out targeted training to obtain the necessary certificate and obtain recognition in this area.

Within the framework of the same problem, the competence model contains clear instructions regarding the policy of the association, as well as requirements for the level of training of experts to participate in certification procedures. Summarizing all of the above, several conclusions can be drawn (Van Merriënboer, 1997):

1. Despite the apparent commonality of some elements of the competence-based approach and traditional pedagogical ideas about skills and abilities, these phenomena are conceptually different. The theory and practice of vocational education (especially in higher education) is more connected with the classical university tradition, which finds its justification in the ideas of Platonism, modern European rationalism, philosophy of culture, etc. On the other hand, the competence-based approach is rooted in the non-classical ideas of positivism and pragmatism, modern management theory, testology. Despite the seeming abstractness, the above distinction has a significant impact on the structure of descriptive procedures. Thus, pedagogical consciousness is to a significant extent object-centered, i.e. in most of the concepts used, the main element of content is objects and knowledge about them. Accordingly, competence is defined as a way of acting in relation to certain objects. If we turn to the American experience in the formulation of competence models, then here the action, the operation, which is related not to the object (real or ideal), but to the situation, the problem comes to the fore. Accordingly, objects acquire a completely different status: they are no longer natural phenomena that must be identified, described and classified, but man-made evidence of mastering the corresponding competence (plans, reports, analytical notes).

2. The context and infrastructure of the authentic versions of the competence-based approach and the models discussed in the educational context differ even more significantly. In reality, the spaces of conceptualization themselves are different: in our case, we are talking about the need for scientific substantiation of the corresponding concepts, while the American situation involves the definition of competencies within the framework of multilateral social dialogue. Thus,

it can be argued that the concepts of competence and competence are interpreted in the pedagogical culture in a classical way, i.e. as ideal entities to be explained and comprehended. At the same time, competence in Western culture is seen as a non-classical phenomenon rooted in public educational practice and reflecting the existing balance of interests of society (to a lesser extent, the state), educational institutions, employers, and consumers of services.

3. A competency-based approach will inevitably be in demand. The problem is that the understanding of the competence-based approach and the strategy for its implementation should be correlated not only with the existing scientific developments, but also with the ongoing changes in the regulatory, economic, socio-psychological status of education. Another important problem of the implementation of the competence-based approach is related to ensuring continuity between the existing regulatory framework of certification procedures and the newly developed approaches, in this connection, solutions cannot but have a compromise nature.

So, as a result of the analysis of existing standards in the field of teacher education, we can conclude that the most optimal form of representation of models of educational and professional competence of teachers will be a three-level model, which includes the following components (Markova, Sedykh, Tsyplakova, Polunin, 2018):

1. Characteristics of the basic level of competence, corresponding to the general orientation of the graduate in future activities, knowledge of the basic standards and requirements, as well as - the presence of general ideas about the educational situation in the world. Accordingly, the basic competence is determined in relation to objects (legislative acts, scientific texts, etc.), and the following indicators are used (Kolgatin, Kolgatina, 2019):

- reproduction of the main ideas of the documents, knowledge of the approximate terms and subjects responsible for their implementation;
- the correlation of information with the source (i.e. knowledge of where the relevant information may be located);
- commenting on texts (i.e. correlating standards with real events, identifying problems and contradictions, etc.).

2. Characteristics of an intermediate level of competence corresponding to the correct actions in some typical, standard situations. Accordingly, to determine the intermediate level, the concept of criteria (i.e. generalized action formulas) and indicators (i.e. materialized products of actions) is introduced. Indicators of the formation of the relevant criteria are: - clarification of the meaning of certain concepts and terms, an explanation of their application in practical situations; - solving practical problems of teaching; - solving theoretical problems in connection with professional activities; - elementary analysis and self-analysis of activities, including writing reports, correcting errors in documentation, helping colleagues in resolving controversial situations.

3. Characteristics of the professional level of competence corresponding to the moral and psychological (motivational), intellectual and communicative readiness for professional activity.

From this point of view, the following criteria stand out (Bailey, Zalfan, Davis, Fill, Conole, 2006):

- discussion of professional problems and clarification of the tasks of professional activity;
- forecasting the main difficulties and problems arising in the process of solving problems;
- design of complex processes;
- favorable reviews from colleagues and practice leaders about the sphere of life and professional interests, the peculiarities of the individual style of activity, etc.

In general, the competence model of a specialist turns out to be a rather complex multi-level education, where, for example, objects are compared to individual knowledge, specific materialized evidences to the criteria of practical training, and data from psychological tests, interviews, etc. to personal and professional aspects. The situation turns out to be even more complex and multifaceted. If the competences are differentiated according to the levels of community (for example, general professional, professional, special) or type (general educational, professional, personal). Here, the achievement of any agreed decision will require the involvement of not only psychological and pedagogical concepts, but also methods of modern humanities, including sociology, social psychology, cultural studies, etc.

The modernization of education on a competency-based basis should reflect a type of educational content that is not limited to a knowledge-orientated component, but presupposes a holistic experience in solving life problems, performing key functions, social roles, and competencies. Of course, objective knowledge does not disappear from the structure of education, but plays a subordinate, orienting role in it.

The competence-based approach puts forward in the first place not the student's awareness, but the ability to solve problems that arise in the following situations:

- in the knowledge and explanation of the phenomena of reality;
- when mastering modern technology and technology;
- in the relationship of people in ethical standards, when assessing their own actions;
- in practical life when fulfilling the social roles of a citizen, family member, voter, city dweller;
- in legal regulations and administrative structures;
- when choosing a profession and assessing their readiness to study at an educational institution, when it is necessary to navigate the labor market;
- if necessary, resolve their own problems: life self-determination, lifestyle choices.

The main positive aspects of project learning can be identified:

- the student is in the center of attention, assistance is provided to the development of his creative abilities;
- each student can learn in accordance with his level of development, since the individual pace of work on the project is applied;

- development of basic mental and physiological functions;
- high level of motivation;
- sufficiently deep assimilation of the foundations of knowledge, since the subject is built on the basis of logic.

In addition, the availability of ready-made homework in free access today requires a teacher using this technology to achieve a meaningful and formal diversity of educational and project activities, non-standard topics of projects.

This will make it possible to implement the main idea of project-based learning: the development of students' independence. Despite the listed disadvantages, the technology of project-based teaching today plays an important role in school teaching, and as you can see, it is a rather progressive technology. If a student copes with work on his educational project, then I want to believe that in the future this will help him navigate difficult situations, adapt to living conditions, and show communication skills.

CONCLUSION

Currently, the world education system is faced with the task of reforming the system of higher pedagogical education, as well as the current education of teachers, the implementation of which implies conceptual changes at all levels and stages of education. The competitiveness of the country and the general level of innovative development largely depend on the success of reforming teacher training in the context of implementing a competency-based approach in the process of teacher's project activities. In addition, teacher training takes an important place in the process of human capital formation. The theoretical significance of the study is that its results prove the feasibility of introducing the technology of the competence-based approach in the process of project activities into the general educational process. The practical significance lies in the fact that the theoretical material contained in the article can become the basis for the development of educational programs for pedagogical activities in order to successfully integrate design technology. The model developed by us for the implementation of the competence-based approach in the process of project activities can serve as a means for early vocational guidance, increasing students' interest in the educational process, developing thinking, and implementing the principle of continuity in personnel training.

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