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PEDAGOGICAL STRATEGIES AND METHODS FOR FOSTERING CREATIVITY THROUGH DESIGN

Abstract

The article is devoted to the study of pedagogical strategies and methods used to form the creativity of students through the method of projects in the context of the Kazakh educational system. A mixed-method approach was utilized in this study, encompassing qualitative data analysis based on literature reviews, analysis of educational plans, interviews with experienced educators, analysis of students' completed projects, as well as quantitative analysis involving statistical data processing. The study revealed that the project method has a positive impact on the development of creativity of students in Kazakhstan. Seasoned educators employing this approach introduced valuable techniques and strategies conducive to stimulating students' creativity. The analysis of projects executed by students confirmed the existence of innovative and creative works.

The outcomes of this article may serve as a foundation for the further development of educational programs and strategies aimed at fostering students' creativity in Kazakhstan and other educational systems.

Keywords: designing, creativity, pedagogical strategies, teaching methods, educational system, innovations in education, curricula.

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ЖОБАЛАУ АРҚЫЛЫ ШЫҒАРМАШЫЛЫҚТЫ ҚАЛЫПТАСТЫРУДЫҢ ПЕДАГОГИКАЛЫҚ СТРАТЕГИЯЛАРЫ МЕН ӘДІСТЕРІ

Аңдатпа

Мақала Қазақстандық білім беру жүйесінде жобалау арқылы оқушылардың креативтілігін қалыптастыру үшін қолданылатын педагогикалық стратегиялар мен әдістерді зерттеуге арналған. Жұмыста аралас әдіс қолданылды, соның ішінде әдебиеттерді шолуға, оқу жоспарларын талдауға және тәжірибелі мұғалімдермен сұхбаттарға негізделген сапалы деректерді талдау, оқушылардың дайын жобаларын талдау және статистикалық деректерді өңдеуді қамтитын сандық талдау. Зерттеу жобалау арқылы Қазақстандағы оқушылардың креативтілігін дамытуға оң әсер ететінін анықтады. Осы әдісті қолданатын тәжірибелі мұғалімдер оқушы-лардың креативтілігін ынталандыруға ықпал ететін құнды әдістер мен стратегияларды ұсынды. Оқушылар жасаған жобаларды талдау инновациялық және шығармашылық жұмыстардың бар екендігін растады.

Осы мақаланың нәтижелері Қазақстанда және басқа да білім беру жүйелерінде оқушылардың шығармашылығын дамытуға бағытталған білім беру бағдарламалары мен стратегияларын одан әрі дамытуға негіз бола алады.

Түйін сөздер: жобалау, шығармашылық, педагогикалық стратегиялар, оқыту әдістері, білім беру жүйесі, білім берудегі инновациялар, оқу жоспарлары.

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ПЕДАГОГИЧЕСКИЕ СТРАТЕГИИ И МЕТОДЫ ФОРМИРОВАНИЯ ТВОРЧЕСТВА ЧЕРЕЗ ПРОЕКТИРОВАНИЕ

Аннотация

Статья посвящена исследованию педагогических стратегий и методов, используемых для формирования креативности учащихся через проектирование в контексте казахстанской образовательной системы. В работе использовался смешанный метод, включая качественный анализ данных, основанный на обзоре литературы, анализе учебных планов и интервью с опытными педагогами, анализ готовых проектов учащихся, а также количественный анализ, включающий статистическую обработку данных. Исследование выявило, что проектирование оказывает положительное воздействие на развитие креативности учащихся в Казахстане. Опытные педагоги, использующие этот метод, представили ценные методики и стратегии, способствующие стимуляции креативности у учеников. Анализ проектов, выполненных учащимися, подтвердил наличие инновационных и креативных работ.

Результаты данной статьи могут послужить основой для дальнейшего развития образовательных программ и стратегий, направленных на развитие креативности учащихся в Казахстане и в других образовательных системах.

Ключевые слова: проектирование, креативность, педагогические стратегии, методы обучения, образовательная система, инновации в образовании, учебные планы.

Basic provisions. – The use of interdisciplinary projects contributes to the integration of knowledge from different subject areas and stimulates the creative thinking of students.

– The introduction of information technology in project activities enhances opportunities for creative work and facilitates interaction in the digital environment.

– The development of projects aimed at solving social and environmental problems contributes to the development of students' creative potential and their active civic participation.

– Support from educational institutions, qualified and inspiring teachers, as well as the integration of the project method into various subject areas are critical for the development of students' creativity.

Introduction. Modern education faces the challenge of fostering students' creative abilities, nurturing their creativity, and developing their independent thinking skills. To achieve this goal, teachers actively use the project method as a powerful tool for developing students' creative abilities. The relevance of this topic is driven not only by contemporary educational demands but also by global trends in societal development. Rapid technological advancement, increased competition, and the need for innovative solutions make creativity and students' creative potential crucial resources for the future. Hence, the study of pedagogical strategies and methods that contribute to the formation of creativity is highly pertinent.

The central aspect of this topic is related to the consideration of the project method as the main tool for increasing students' creativity. Project-based learning provides a structured approach that allows students to study subjects, solve problems, and create products or projects, thereby contributing to the development of their creative skills.

Another important aspect is the pedagogical strategies used by teachers to stimulate students' creativity within the framework of project methods. This may include creating an inspiring educational environment, fostering independence and initiative, as well as providing opportunities for experimentation and exploration. The topic also encompasses various methods and approaches used by educators to activate and develop students' creativity. This includes methods for promoting creative thinking, designing creative tasks and exercises, as well as assessment and feedback

techniques that contribute to the formation of creative skills. Special attention is paid to evaluating the effectiveness of pedagogical strategies and methods of creativity development using the project method. Analyzing the results and their impact on students' creativity levels helps identify the most successful approaches and techniques [1, p. 95].

The theme also addresses the role of education in the development of creativity as a key factor for students' personal and professional growth. Educational institutions play a crucial role in preparing future leaders and innovators, and pedagogical strategies and methods have a significant influence on achieving this goal. The study and understanding of the key aspects of the topic "Pedagogical strategies and methods for the development of creativity through the project method" is of great importance for the modern education system and contributes to the development of students as creative and innovative personalities [2, p. 68].

The significance of this research lies in the fact that its results can contribute to the development of more effective teaching methods aimed at fostering students' creativity. This will not only enhance the quality of education but also prepare students for successful modern life and careers. The development of creativity has become an essential component of educational programs, and research in this field helps identify best practices in this direction.

The purpose of this article is to study and analyze pedagogical strategies and methods of creativity development through the project method.

In the pedagogical research conducted by Elena I. Eremina, the substantive and technological components of personality creativity formation have been identified. The article explores various types of creative technologies, including active learning, interactive, and game-based technologies. Examples of methodological techniques for organizing educational activities used by the authors during the formative stage of empirical research are provided. Forms of work for fostering students' creativity, such as exhibitions within the study group, creative-oriented lessons, training exercises, and non-traditional lessons, are described [3, p. 23].

The use of project technologies in elementary school helps teachers to understand the personality of each child, reveal his individual characteristics and needs. Such technologies are aimed at creating conditions for interpersonal interaction of children in the educational process and expanding their skills of social interaction. Project activities help students develop cognitive needs, motivation to learn. Teaching in elementary school should be organized to engage students in cognition, to develop their cognitive interest. To do this, it is necessary to make reading interesting. This is achieved through the use of a systematic-active approach in education, project learning technologies [4, p.216].

Analyzing the project activities of Primary School students, it was found that, unlike other types of educational activities, it can be observed that the components of the project activities of Primary School students (learning conditions, educational activities, educational control, assessment) are purposefully formed during the implementation of task-projects. As a result, the teacher has the opportunity to closely monitor the formation of each component of the structure of educational activity using information technologies. An important feature of project activities is their joint performance. At the same time, the compatibility of project activities can apply both to the teacher and the student, and to a group of classmates who interact with each other in the process of performing the project as a whole. The project method unites the team and teaches interaction [5, p.72].

According to the work of Suleimanova F.M., The involvement of Primary School students in project learning leads them to the ability to analyze and systematize the material, brings children a sense of satisfaction with the result of their work. The project method is aimed at forming the core competencies of students, preparing them for real life situations. The use of project technologies in elementary grades contributes to the development of such personal qualities as Independence, purposefulness, responsibility, initiative, perseverance, endurance [6, p. 735].

When organizing design activities in elementary school, taking into account the age and psychological and physiological characteristics of Primary School students, it is better to choose the topics of children's design work from the content of academic disciplines or areas adjacent to them. During the work on the project, it is advisable to conduct excursions, walks-observations, social actions with primary school students [7, p.2].

Work experience shows that when using the technology of the project method in elementary grades, the following sequence of involving students in project activities is effective: initially short-term (1-2 lessons) move from single-subject projects to long-term, interdisciplinary, individual projects to group and general classes [8, p.71]. Children learn to speak in public from elementary school. This is very difficult for a certain age. In elementary school, the final stage of project activity - presentation (protection) of the project requires special attention [9, p.311].

The effectiveness of using the technology of project activity in elementary school depends on taking into account the age characteristics of students when choosing a project topic, determining its type, structure and the degree of teacher participation in coordinating students' activities when working on a project [10, p.1014].

Materials and methods. The first stage of the research was a qualitative analysis of the literature. The main objective of this stage was to review existing research and publications in the field of pedagogical strategies and methods for developing creativity using the project method. This analysis helped to identify existing theoretical approaches and concepts, as well as to determine which methods and strategies have already been implemented in educational practices. At the next stage of the study, an analysis of educational programs and curricula was carried out. The purpose of this analysis was to determine which specific project-based teaching methods are integrated into educational practices and how they correspond to the goals of developing students' creativity. The key objective of this study was to conduct interviews with experienced teachers specializing in teaching using the project method. For this purpose, 10 teachers working in various educational institutions of Kazakhstan, including schools and universities, were selected. To collect the data, 5 questions were developed aimed at identifying specific methods and strategies used by these teachers to stimulate student creativity:

– What projects do you use in your practice to develop students' creativity?

– What methods and approaches do you consider the most effective for stimulating creative thinking in students?

– What problems and challenges arise when implementing the project method in the educational process?

– Can you give examples of successful projects completed by your students?

– In your opinion, what role does information technology play in developing students' creativity through the project method?

To assess the degree of creativity and innovation in projects, as well as to identify patterns in the development of students' creativity, the projects carried out by students were analyzed. The teachers were offered a task in the form of a project on the topic "Developing a solution for a socially significant problem in your community." 30 papers were reviewed, each of which was evaluated according to the following criteria:

– Creativity assessment: analysis of unique ideas, non-standard solutions and a creative approach to problem solving.

– Assessment of innovation: the degree of innovation of projects based on the use of new technologies, methods or approaches to solving problems.

– Analysis of project topics and areas: a variety of topics and areas in which projects were carried out to identify the most conducive to the development of creativity in students.

– Comparative analysis: comparing projects with each other to identify common features and differences in the development of creativity.

Quantitative data analysis included statistical processing of data obtained from the analysis of student projects. This analysis was aimed at assessing the level of creativity and innovation in these projects, as well as identifying patterns in the development of creativity among students. The central task of this study was to evaluate the effectiveness of pedagogical strategies and methods for developing creativity using the project method. This assessment was based on an analysis of the results of student project activities and interviews with teachers. She helped identify best practices and recommendations for educators.

Results. As part of the study, interviews were conducted with 10 experienced teachers from various educational institutions in Kazakhstan. The interview was aimed at identifying specific methods and strategies used by teachers to stimulate student creativity through the project method.

Results of interviews with teachers.

80% of teachers noted that they actively use interdisciplinary projects that allow students to integrate knowledge from various subject areas. This is considered an effective way to develop creativity, as students can approach problem solving from different perspectives. 50% of teachers mentioned that they work with external organizations, including businesses, museums and non-profit organizations, to create projects with real practical value and addressing current public issues. 70% of teachers stressed the importance of using information technology in the project method, including online resources, web platforms and software to support the creation of digital projects. 40% of teachers noted that they develop projects aimed at solving social and environmental problems, which contributes to the development of creativity and active citizenship among students.

90% of teachers indicated that creating an inspiring and supportive educational environment is key to stimulating creativity. 60% of teachers noted the importance of encouraging students' independence and initiative, which allows them to take responsibility for their projects and develop leadership skills. 70% of teachers believe that providing students with opportunities for experimentation and research promotes creative thinking and innovation.

50% of teachers noted that the lack of time to implement projects within the curriculum is one of the main problems. 40% of teachers indicated limited resources, such as access to technologies and materials necessary for the successful implementation of projects. 30% of teachers faced resistance from colleagues or the administration when introducing new teaching methods.

60% of teachers mentioned successful environmental projects aimed at improving the school environment and raising environmental awareness. 40% of teachers mentioned projects related to the development of applications or software that solve specific problems in the community. 50% of teachers mentioned projects aimed at helping vulnerable groups or improving social conditions in the local community.

70% of teachers stressed that information technology significantly expands opportunities for creative work, allowing students to create more complex and innovative projects. 50% of teachers noted that information technology contributes to more effective interaction and cooperation between students, especially in the context of distance learning.

Interdisciplinary projects turned out to be the most popular method among the teachers surveyed, which indicates its effectiveness in integrating knowledge and stimulating creative thinking. The use of information technology plays a key role in supporting the project method, expanding opportunities for creative work and interaction. Socially significant projects contribute to the development of creativity and active citizenship, which emphasizes the importance of their implementation in educational programs. The main challenges, such as lack of time and resources, require attention and solutions from educational institutions and administration for the successful implementation of the project method. Creating a supportive and inspiring educational environment, as well as encouraging self-reliance and initiative, are key factors for the successful development of creativity in students.

The results of the interview confirm the effectiveness of the project method in developing creativity among students in Kazakhstan and emphasize the need for further development and support of this method in the education system.

As part of the study, 30 projects completed by students were analyzed. The projects were evaluated according to the following criteria: creativity, innovation, project themes and areas, as well as common features and differences. 70% of the projects demonstrated a high level of creativity. These projects included unique ideas and non-standard solutions to problems. For example, one of the projects proposed the use of renewable energy sources to illuminate the school campus, which was an original and creative solution. 20% of the projects showed an average level of creativity. These projects used well-known methods and approaches, but they included elements of novelty and creativity. 10% of the projects had a low level of creativity, mainly due to the use of standard solutions and lack of originality.

60% of the projects demonstrated a high level of innovation. These projects actively used new technologies and methods, such as the development of mobile applications to solve social problems or the use of 3D printing to create prototypes. 30% of the projects showed an average level of innovation. These projects used existing technologies, but in new contexts or with new goals. 10% of the projects had a low level of innovation, as they used traditional methods without significant innovative elements. 40% of the projects were related to science and technology. These projects included developments in the fields of information technology, engineering and natural sciences. 20% of the projects concerned art and creativity. For example, projects for the creation of art installations or the development of multimedia content. 20% of the projects were devoted to environmental issues and sustainable development. This included projects on waste recycling, conservation of natural resources and environmental improvement. 20% of the projects were aimed at improving the educational process and solving social problems, such as inclusive education and social assistance to vulnerable groups. Most of the projects (80%) had elements of group work and collaboration, which contributed to the development of teamwork skills. Also, 60% of the projects actively used information technology.

The main differences between the projects were in the levels of creativity and innovation, as well as in the variety of topics and areas. Some projects were more focused on practical applications, while others were of a research nature. Most of the projects have demonstrated a high level of creativity and innovation, which confirms the effectiveness of the project method for developing these qualities in students. Projects involving the use of new technologies and non-standard solutions have shown the greatest results. The projects covered a wide range of topics, which indicates the possibility of integrating the project method into various fields of knowledge. The largest number of projects were related to science and technology, reflecting the current trend towards digitalization and technological development. Group work and collaboration have been key elements of most projects, highlighting the importance of these skills in modern education. Differences in the levels of creativity and innovation show that some students need additional support and inspiration to achieve high results.

Discussion. The results of our research clearly indicate the positive impact of the project method on the development of students' creativity in Kazakhstan. Firstly, the project method stimulates students' creative thinking and their ability to generate new ideas.

Secondly, the project method develops students' independence and initiative. Students take an active role in creating and implementing projects, which promotes the development of leadership qualities and self-confidence.

Third, collaborative learning, which is an integral part of the project method, strengthens communication skills and the ability to work in a team. This is not only important for fostering creativity but also for preparing students for the modern workforce, where teamwork and idea exchange play a crucial role.

Key factors of successful use of the project method.

The study also identified key factors contributing to the successful use of the project method and the development of creativity:

Educational institutions must create a supportive environment where students feel comfortable expressing their ideas and experimenting. Educators and administration should actively support creative initiatives. Experienced and inspiring educators play a crucial role in successful project-based learning. They can become mentors and project leaders, motivating students to be creative. Project-based learning should encompass various topics and subject areas to provide students with opportunities to develop creativity in different contexts. Projects that integrate knowledge from different fields promote complex thinking and creativity. The use of modern technologies, such as digital tools and online resources, complements project-based learning and contributes to the creation of innovative projects.

Conclusion. Within the framework of this study, we have studied in detail the pedagogical strategies and methods used to develop students' creativity through the project method in the context of education in Kazakhstan. Our work began by considering the relevance of the problem, emphasizing the paramount importance of fostering creativity in the modern world, as well as the role of the project method in this process. To conduct this research, we employed a mixed-method approach, which encompassed both qualitative and quantitative data analysis. Qualitative analysis involved literature review, analysis of educational plans, and interviews with educators. Quantitative analysis involved statistical processing of data gathered during project analysis. Based on the results of the study, it can be concluded that the project method is an effective tool for developing creativity among students in Kazakhstan. To facilitate the successful integration of the project method into the educational system, support from educational institutions and the active involvement of qualified teachers are necessary.

This research project can serve as a starting point for further research and development of educational programs aimed at developing students' creative abilities and preparing them for the challenges of the modern world.

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