

**ХИМИЯ, БИОЛОГИЯ, ГЕОГРАФИЯ ЖӘНЕ ЭКОЛОГИЯНЫ ОҚЫТУ ӘДІСТЕМЕСІ
МЕТОДИКА ПРЕПОДАВАНИЯ ХИМИИ, БИОЛОГИИ, ГЕОГРАФИИ И ЭКОЛОГИИ
METHODS OF TEACHING CHEMISTRY, BIOLOGY,
GEOGRAPHY AND ECOLOGY**

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**WAYS TO DEVELOP THE CREATIVE ABILITIES OF STUDENTS WITH
THE USE OF INNOVATIVE TECHNOLOGIES**

Abstract

The article analyzes methodological and psychological-pedagogical techniques aimed at the creative development of school students in the process of teaching geography. In addition, innovative technologies were proposed that develop the student's creative play in the process of teaching geography with a theoretical justification of the good sides of the development of students' creative abilities, and a study of the creative abilities of each student was conducted.

Currently, the importance of taking into account and improving the creative abilities of students is increasing. The model that takes into account the creative abilities of students in the learning process consists of two stages. The first stage is the program-content level. The program-content level consists of various exercises that develop the student's mental divergence, combinatorial tasks and creative works, as well as tasks and exercises that develop verbal creativity. The second stage is the service-operational level. At this level, pedagogical assistance and support from the teacher, forms of dialogue between the student and the teacher take place, innovative technologies are used, and subject-subject relations are introduced into educational activities. The development of creative abilities of schoolchildren is a holistic problem in which the interests of all subjects intersect, and not only in geography lessons. The main problem to pay attention to is the identification, training and development of students whose creative abilities are most noticeable.

One of the main tasks of the modern education system is the formation of a personality with developed creative abilities. In this regard, the development and improvement of creative abilities of schoolchildren is considered as an urgent problem. It is known that the development of students' creative abilities is closely related to the acquisition of knowledge in the learning process, through the acquisition of knowledge, that is, with the mental activity of students in obtaining knowledge. Therefore, the student should be able to think freely and productively during the lesson. The ability to think freely allows the student to perform the task from a new angle, to fantasize and formulate the task in an original way.

Keywords: innovation, pedagogy, creativity, creativity, creativity, geographical training, methodology, pedagogical-psychological, intellectual.

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ИННОВАЦИЯЛЫҚ ТЕХНОЛОГИЯЛАРДЫ ПАЙДАЛАНА ОТЫРЫП, ОҚУШЫЛАРДЫҢ ШЫҒАРМАШЫЛЫҚ ҚАБІЛЕТІН ДАМУ ЖОЛДАРЫ

Аңдатпа

Мақалада, географияны оқыту барысында мектеп оқушыларды шығармашылық жағынан дамыту мақсатында әдістемелік және психологиялық-педагогикалық әдіс-тәсілдерге анализ жасалды. Онымен қоса оқушылардың шығармашылық қабілетін дамытудың жақсы жақтарын теориямен негіздей отырып, география пәнін оқыту барысында оқушының шығармашылық ойын дамытатын инновациялық технологиялар ұсынылды, сонымен қатар әр оқушылардың шығармашылық қабілетіне зерттеу жүргізілді.

Қазіргі таңда, оқушылардың шығармашылық қабілеттерін ескеру мен оны арттырудың маңыздылығы артып келеді. Оқу барысында білім алушылардың шығармашылық қабілетін қарастыратын модель екі сатыдан тұрады. Бірінші сатысы – бағдарламалық-мазмұнды деңгей. Бағдарламалық-мазмұнды деңгей оқушының ойлау дивергенттілігін дамытатын түрлі жаттығулардан, комбинаторлық тапсырмалар мен шығармашылық жұмыстар, сонымен қатар ауызша шығармашылық қабілетті дамытатын тапсырмалар мен жаттығулардан тұрады. Екінші сатысы - қызмет-операциялық деңгей. Бұл деңгейде мұғалім тарапынан педагогикалық көмек және қолдау көрсетіледі, оқушы мен мұғалім арасында диалог формалары жүреді, инновациялық технологиялар пайдаланылады, сонымен қатар оқу-тәрбие қызметіне субъект-субъектілік қатынастарды енгізеді. Мектеп оқушыларының шығармашылық қабілетін дамыту тек география сабағында ғана емес, барлық пәндердің мүдделері қиылысатын біртұтас мәселе. Бұл жердегі негізгі назар аударатын проблема – шығармашылық қабілеті айтарлықтай көзге түсетін оқушыларды анықтау, оқыту және дамыту.

Қазіргі білім беру жүйесінің негізгі міндеттерінің бір – шығармашылық қабілеттері дамыған тұлғаны қалыптастыру болып отыр. Осы орайда мектеп оқушыларының шығармашылық қабілеттерін дамыту мен шыңдау өзекті мәселе ретінде қарастырылып отыр. Білім алушылардың шығармашылық қабілетінің дамуы оқу барысындағы білімді алумен, білімді алу жолымен, яғни оқушылардың білім алу кезіндегі ақыл-ой белсенділігімен тығыз байланыста болып отырғаны белгілі. Демек оқушы сабақ барысында еркін әрі өнімді ойлай алуы керек. Еркін ойлай алу оқушыға тапсырманы жаңа қырынан орындауға, қиялдай алуға және тапсырманы ерекше тұжырымдауға мүмкіндік береді.

Түйін сөздер: инновация, педагогика, шығармашылық, шығармашылық қабілет, креативтілік, географиялық оқыту, әдістеме, педагогикалық-психологиялық, интелект.

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ПУТИ РАЗВИТИЯ ТВОРЧЕСКИХ СПОСОБНОСТЕЙ УЧАЩИХСЯ С ИСПОЛЬЗОВАНИЕМ ИННОВАЦИОННЫХ ТЕХНОЛОГИЙ

Аннотация

В статье проведен анализ методических и психолого-педагогических приемов, направленных на творческое развитие учащихся школы в процессе преподавания географии. Кроме того, были предложены инновационные технологии, развивающие творческую игру учащегося в процессе преподавания географии с теоретическим обоснованием хороших сторон развития

творческих способностей учащихся, а также проведено исследование творческих способностей каждого учащегося.

В настоящее время возрастает важность учета и повышения творческих способностей учащихся. Модель, учитывающая творческие способности обучающихся в процессе обучения, состоит из двух этапов. Первый этап-программно-содержательный уровень. Программно-содержательный уровень состоит из различных упражнений, развивающих мыслительную дивергенцию учащегося, комбинаторных заданий и творческих работ, а также заданий и упражнений, развивающих словесные творческие способности. Второй этап-сервис-операционный уровень. На этом уровне педагогическая помощь и поддержка со стороны учителя, происходят формы диалога между учеником и учителем, используются инновационные технологии, а также внедряются субъектно-субъектные отношения в учебно-воспитательную деятельность. Развитие творческих способностей школьников-это целостная проблема, в которой пересекаются интересы всех предметов, а не только на уроках географии. Основная проблема, на которую следует обратить внимание, – это выявление, обучение и развитие учащихся, чьи творческие способности наиболее заметны.

Одной из основных задач современной системы образования является формирование личности с развитыми творческими способностями. В этой связи развитие и совершенствование творческих способностей школьников рассматривается как актуальная проблема. Известно, что развитие творческих способностей обучающихся тесно связано с приобретением знаний в процессе обучения, путем приобретения знаний, то есть с умственной активностью учащихся при получении знаний. Следовательно, ученик должен иметь возможность мыслить свободно и продуктивно во время урока. Способность мыслить свободно позволяет учащемуся выполнять задание с нового ракурса, фантазировать и оригинально формулировать задание.

Ключевые слова: инновации, педагогика, творчество, творческие способности, креативность, географическое обучение, методология, педагогико-психологическая, интеллектуальная.

Introduction. Changes in the education system and the need to develop the creative abilities of students are becoming increasingly important. In this regard, every teacher faces the questions “How to teach in the age of advanced information?”, “How to improve the quality of education of students?”. and “What kind of influence is needed for a student to become a competitive person?” many pressing questions arise [1].

Consider the contribution of domestic scientists who studied the development of students' creative abilities.

The great poet, publicist, teacher Magzhan Zhumabaev in his pedagogical textbook focuses on the development of the child and says that the basis of the development of the child is the formation of his knowledge and attention.

The scientist-teacher Tolegen Tazhibaev writes that if “creativity” means “production”, “invention of something”, then “skill is a characteristic feature of a person for carrying out a certain type of activity and obtaining results” [2].

Zh.Aimautova “We need to do something, regardless of whether the child is good or bad. “The soul of a person who is not busy with anything does not develop properly,” this opinion shows that the child must constantly seek and act in order to develop his creative abilities.

B.A. Turgynbaeva also made a great merit in the study of the ways of development and formation of the creative abilities of children. He presents his work "Creativity and developmental education" (1999), which develops creativity through teaching methods. It can be seen from their works that the problem of creativity in general psychology and pedagogical science was in the center of attention of the scientists of the world. And A.Aldamuratov considers abilities as follows: “Ability” means a person’s ability to perform a certain type of action, and the ability here is not knowledge and skill, but a person’s readiness to perform a certain task” [3].

The problem of creativity and creative thinking has always been one of the most relevant in pedagogy. However, despite this, it has not been sufficiently studied both from a theoretical and practical point of view. Therefore, interest in the topic of creativity remains relevant and important, especially in the updated educational content. The concepts of "creativity" and "creativity" are studied from different angles: theories and practices necessary for the development of creativity and creative abilities of a person, creative thinking and creative abilities of a person are studied [4].

The relevance of introducing interactive methods into the educational process for the development of children's creativity is also obvious. But the methodology for developing creativity in the context of teaching geography at school is less developed and requires research. Therefore, the issue of developing the creative abilities of students with the help of interactive technologies in teaching geography is one of the most relevant.

If we draw a conclusion from the above definition of the concept of "creativity", then creativity is realized on the basis of knowledge and skills acquired by a student at any level, be it preschool, general education or higher education. At the same time, based on their individual mental and cognitive characteristics, they produce something new (a new thought, a new idea, a new material object, etc.) [5].

Materials and methods. In the course of teaching practice at school-gymnasium No. 13 in Almaty, we conducted a practical experiment for 8th grade students in a geography lesson. There are 22 students in the class.

Williams creative test was chosen to determine the creative abilities of students.

The purpose of practical and experimental work: to determine and further develop the level of formation of the creative abilities of schoolchildren through the use of innovative technologies in geography lessons.

Experimental work was carried out in 3 stages:

1. Pre-diagnostic stage - a preliminary determination of the creative abilities of 8th grade students using the selected Williams creativity test.

2. To determine the change / non-change of existing creative abilities - after-school diagnostics using innovative methods proposed when teaching the subject of geography in the course of pedagogical practice.

3. Comparison stage - preliminary determination and comparison of the results of changing / unchanged creative abilities.

In order to determine the level of creativity of students in advance, the Williams creativity test was sent to 22 students by e-mail, and the procedure for passing the test was explained. After the allotted 20 minutes, the students took a photo of the completed test and sent it to the teacher.

Results and analysis. For the systematic and purposeful development of the creative abilities of students, it is necessary to introduce creative tasks into the educational process. At the same time, the textbook, being a means of achieving educational goals, does not aim to develop the creative potential of students, so the number of creative learning tasks proposed by the authors of the textbook is not enough for the active development of creative abilities. adolescent abilities. Therefore, in order to develop the creative abilities of students in the learning process, the teacher should create a system of tasks that involve students in a variety of creative activities aimed at developing all components of creative abilities. In order for the constructed system of creative tasks to work effectively in the learning process, the teacher must know the level of students' creative abilities, which components of creative abilities still need to be developed and which of them are at a high level. In this regard, the teacher should conduct various diagnostics to determine the level of creativity.

In the process of diagnostics, creativity is divided into verbal (verbal creative thinking) and non-verbal (visual creative thinking), which is confirmed by determining the relationship of these types of creativity with the corresponding intelligence factors: visual and verbal. People use words and images in certain associative relations with other words in everyday life, stereotypes and patterns in each social group should be determined specifically for each sample of the subject, using habitual, predominantly

creative thinking. Therefore, the process of creative thinking. In essence, the formation of new semantic communities, distancing from stereotyping can be a measure of a person's creativity [6].

Consequently, the conditions of the creative environment allow one to show creativity, and diagnostic indicators make it possible to reliably identify creative individuals. In addition, low diagnostic results indicate a lack of creativity in the subject, since creative manifestations can also manifest themselves in other areas of activity. Thus, methods for diagnosing creative abilities are primarily designed to accurately identify certain types of creative individuals during testing.

In general, there are many methods and methods for diagnosing the development of creativity. In addition to formal diagnostic methods (tests, questionnaires), informal methods (observation, conversation, analysis of service products) should be used, and in this and other cases it is necessary to compare the results. Also, when diagnosing the development of creative abilities, it is necessary to take into account the age of the respondents, since each age group has creative features and has different abilities when performing diagnostic tasks. The levels of development of creative abilities and manifestations of creative activity are directly related to the stages of development of creative abilities [7].

The creative test of the selected Williams was conducted in accordance with the instructions below. From the above methods of determining the creative abilities of students, the Williams creative test was chosen.

1. The text leaflets necessary for testing were distributed. The test consists of three separate sheets, standard A4 format, each sheet shows 4 squares, inside which stimulating figures are depicted. Under the squares is the number of the figure, the place of the inscription and the inscription.

2. The test is conducted for a limited time: 20 minutes for senior classes (grades 5-11), 25 minutes for junior classes (grades 1-4).

3. Before starting testing, it is necessary to read the testing instructions.

4. After the set time, the tests are collected.

5. The data is processed and the results are recorded in the corresponding tables [8].

As indicators of creative thinking, such criteria as speed, flexibility, originality, full functionality, originality were obtained. Of these criteria, the first four are the most important in assessing the creative level [9].

1. Speed-productivity is determined by counting the number of pictures made by the child, regardless of the content.

2. Flexibility - the number of changes in the image category from the first image. Four categories:

- a living person, flower, tree, any plant, fruit, animal, insect, fish, bird, etc. b.

- mechanical, boat, space, bicycle, machine, tool, toy, equipment, furniture, household items, dishes, etc. b.

- a symbolic letter, number, name, coat of arms, flag, symbolic sign, etc. b.

- type, genre - city, highway, house, yard, park, space, mountains, etc. b.

3. Originality is the place where the image is executed (internal-external to the stimulus figure).

4. Full application-symmetry-asymmetry, in which the details that make the drawing asymmetrical are located.

5. Unusual name-the richness of vocabulary (the number of words used in the name) and the ability to figuratively convey the meaning depicted in the drawings (direct description or hidden meaning, subtext) [10].

The purpose of practical and experimental work: to determine the level of formation of students' creative abilities and their further development using innovative technologies in geography lessons.

As for the results of the study of the normal level of creative abilities of 8th grade students, it can be seen that 5 students out of 22 have a high level of creativity, 11 students have an average level, and 7 students have a low level (Scheme 1). In general, the level of creativity in the class is average.

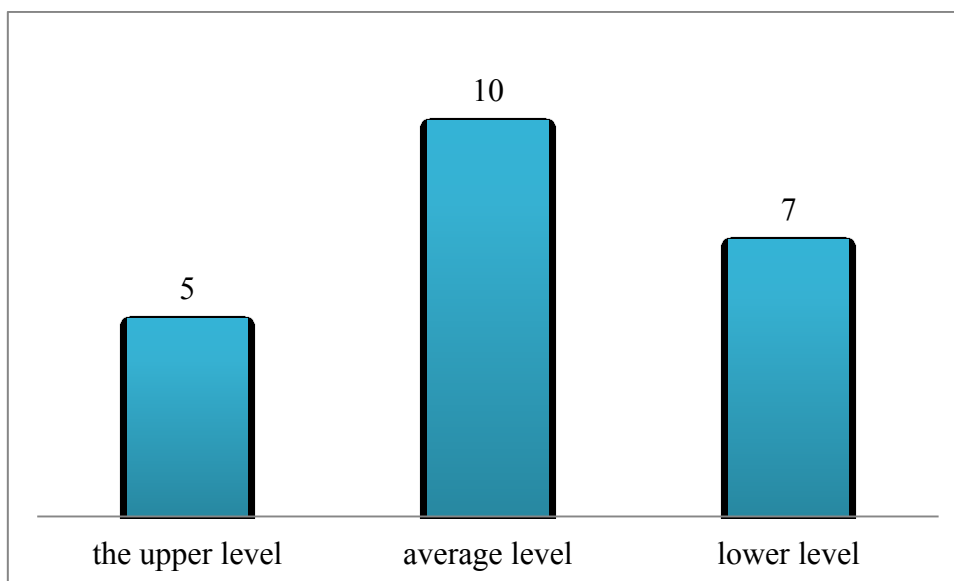


Figure 1. Creative level of the class (at the beginning of the study)

If we distinguish the level of creativity of the class according to the criteria, then, despite the fact that it shows high indicators according to the criteria of speed, flexibility and assigning a unique name to the constructed image, it shows average indicators according to the criteria of originality and completeness of use (diagram 2).

The following study was conducted 3 weeks after the geography lesson using innovative technologies. The formation of creative skills is influenced by many conditions, in particular, the conditions in the family, that is, the availability of necessary subjects and the creation of opportunities for the child's creativity, and the provision of creative tasks using innovative methods and techniques within the walls of the school. In addition to the mentioned cases, it is possible to add the student's innate talent and acquired talent. As we mentioned in the theoretical part of the study, changes occurred in the results after 3 weeks.

Regarding the results of the study of the level of development of creative abilities of 8th grade students, it can be seen that among 22 students, 7 students have a high level of creativity, 10 students have an average level, 5 students have a low level of creativity. In general, the level of creativity in the class is average.

Summing up the results of the study, it can be noted that the level of creativity of 2 students increased from "average" to "high", and the level of creativity of 2 students increased from "low" to "average" in the study conducted after 3 weeks. (diagram 2).

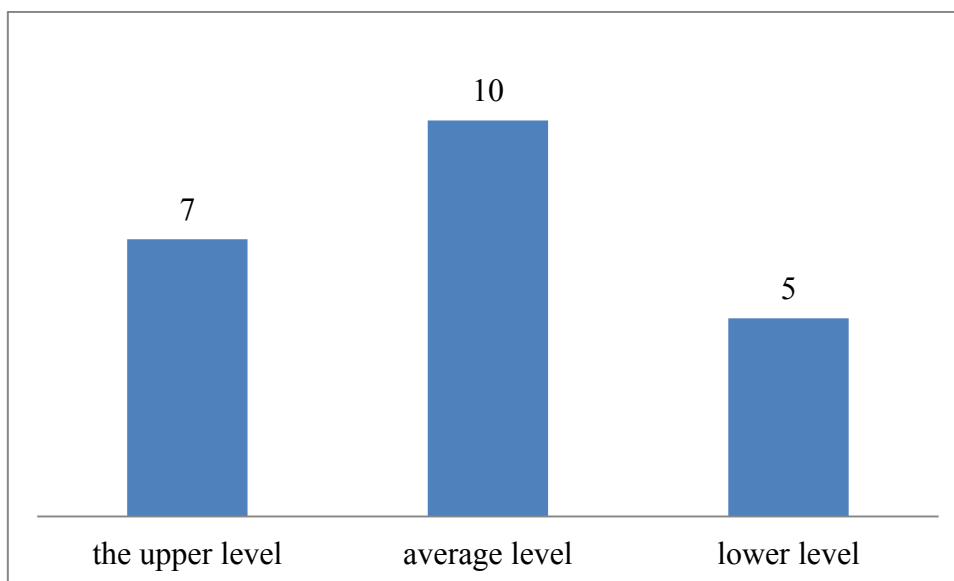


Figure 2. Creative level of the class (at the end of the study)

In accordance with the general logic of the development of creative abilities, in the conditions of education, creative thinking is gradually formed and, thanks to the skill and creativity of teachers, the child, relying on the knowledge and experience gained, eventually begins to show creative activity and creative activity. However, when studying the level of development of creative abilities, it is necessary to understand that the relationship between a number of conditions, the age of children, the level of their creative activity and the development of creative abilities is very free: even in the absence of targeted work on the development of creative abilities, a person can show a fairly high level of his development, depending on natural inclinations, a creative atmosphere in the family, a favorable social situation. Therefore, when diagnosing the creative potential of a teacher in the educational process, each child is offered an individual approach and an individual approach.

Conclusion. Studying the theoretical foundations of the formation and development of students' creative abilities, the impact of innovative technologies on creative abilities, conducting a pedagogical experiment, we developed the following concepts:

1) Summarizing the definitions of the concept of "creativity", we can conclude that creativity is a new thing, a new thought, a new idea or a new material object.

2) Creativity develops in activities that require creativity. Creative activity is one of the conditions for the development of creative potential and is the result of personality development. While creativity is associated with inherited talents, it is not innate or self-evident. The development of students' creative abilities is carried out in subject classes and extracurricular activities.

3) The process of developing the creative abilities of students is a complex process implemented with the help of innovative technologies. The teacher can not only develop the desire and motivation of the student to learn, but also develop his creative abilities, using various game lessons and problem methods in his classes.

4) The levels of development of creative abilities and manifestations of creative activity are directly related to the stages of development of creative abilities. We conducted an experiment describing the levels of development according to the criteria for the development of creative abilities. According to the data obtained as a result of the experiment, we can conclude that there is a positive trend in the growth of the level of students' creative abilities, which provide innovative techniques and creative tasks in geography lessons.

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ГЕОГРАФИЯ САБАҒЫНДА АҚПАРАТТЫҚ МӘДЕНИЕТТІ ҚАЛЫПТАСТЫРУ БОЙЫНША ОҚУШЫЛАРМЕН ЖҰМЫС ЖАСАУДЫҢ ӘДІС-ТӘСІЛДЕРІ

Аңдатпа

Қазіргі қоғам ғылым мен техниканың қарқынды дамуымен, жаңа ақпараттық технологиялардың пайда болуымен, адамдардың өмірін түбегейлі өзгертетін ақпараттың үлкен ағымымен сипатталады. Білімді жаңарту қарқыны соншалықты жоғары, адам өмір бойы бірнеше рет қайта оқып, жаңа мамандықтарды игеруі керек. Мектеп оқушыларының ақпараттық мәдениетін қалыптастыру мәселесінің өзектілігі қазіргі ақпараттық қоғамда адам өміріндегі ақпараттық мәдениеттің функционалдық маңыздылығының артуымен анықталады; ақпарат көлемінің ұлғаюы және адамға шығармашылық дамудың ең бай мүмкіндіктерін беретін ақпараттық коммуникациялардың қарқындылығының артуы; қазіргі қоғамның әлеуметтік-экономикалық даму сипатының өзгеруін анықтайтын ақпараттық технологиялар мен технологиялардың қарқынды дамуы. Қазіргі қоғамның дамуы ақпараттық өркениетке көшумен сипатталады, онда адамдардың интеллектуалдық мүмкіндіктерін арттыратын компьютерлер мен ақпараттық технологияларға басымдық беріледі. Бүкіл әлемде ақпараттың әлеуметтік дамудағы іргелі рөлі туралы хабардар болды. Ақпараттық қоғамдағы дүниежүзілік саммиттің негізгі құжаттарында