LEARNING WITH A SMILE: GAMES AND EXPERIENCES IN ORGANIC CHEMISTRY



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Annotation

The pedagogical process is a set of lessons, extracurricular educational work, carried out bythe teaching and student staff according to one plan. The training mainly uses seminar lessons, practical andlaboratory work, in which various methods and means are used.

The increase in mental load in the classroom makes us think about how to maintain students' interest in the material being studied and their activity throughout the lesson. We have to look for effective teaching methods and methodological techniques that would activate the thoughts of schoolchildren and stimulate them to independently acquire knowledge. We must ensure that the student works actively and enthusiastically during lessons, and use this as a starting point for the emergence and development of curiosity and deep cognitive interest. The purpose of the article is to identify factors and pedagogical conditions for the successful use of games aimed at enhancing the cognitive activity of schoolchildren when studying organic chemistry.

Keywords: good feelings, noble aspirations, collective life skills, game problems, knowledge, horizons,learning process, upbringing system, student's personality.

Аннотация.

Педагогический процесс представляет собой совокупность уроков, внеклассной воспитательной работы, проводимых профессорско-преподавательским и студенческим коллективом по единому плану. В обучении преимущественно используются семинарские

занятия, практические и лабораторные работы, в которых используются различные методы и средства.

Увеличение умственной нагрузки на уроке заставляет задуматься о том, как сохранить интерес учащихся к изучаемому материалу и их активность на протяжении всего урока. Приходится искать эффективные методы обучения и методические приемы, которые бы активизировали мышление студентов и стимулировали их к самостоятельному приобретению знаний. Мы должны обеспечить, чтобы студент активно и увлеченно работал на уроках, и использовать это как отправную точку для возникновения и развития любознательности и глубокого познавательного интереса. Цель статьи - выявить факторы и педагогические условия успешного использования игр, направленных на активизацию познавательной деятельности студентов при изучении органической химии.

Ключевые слова: добрые чувства, благородные стремления, навыки коллективной жизни, игровые задачи, знания, кругозор, процесс обучения, система воспитания, личность студента.

Introduction. In modern life, especially in human production, chemistry is one of the exceptional importance. At the same time, the increasing volume of information, the continuous updating of academic disciplines, and the growth of chemophobia in society have led to the fact that interest in chemistry has decreased among students and at school. Hence the reluctance to study educational and scientific texts of chemical content and the lack of skills to perceive them in general. This resulted in applicants' poor knowledge of the subject and low motivation to study it at school. Schoolchildren always have a question: why should an economist, electric welder, electrician, accountant, or lawyer study chemistry? And, as a result, poor knowledge of chemistry, and later difficulties arise in mastering special disciplines related to chemistry.

In this regard, it becomes relevant to improve the forms and methods of teaching chemistry, which stimulate the mental activity of schoolchildren, develop their cognitive activity, and teach them to practicallyuse chemical knowledge [1].

In solving these problems, game forms of organizing classes can find their place, which can act as an effective teaching tool. The atmosphere of the game creates conditions under which the children, unnoticed by themselves, become involved and active, and begin to understand that you can win when you have a certain amount of knowledge. In addition, the game form of conducting classes involves collective cooperation between the teacher and students. When forming groups, the level of knowledge of students, the direction of their interests, and psychological compatibility are taken into account. A schoolchild can only cope with the task entrusted to him when, in collaboration with other children, he fully develops his knowledge; only then does he master the necessary skills and abilities of collective work. On the same basis, the formation of the necessary moral qualities occurs.

Despite the large number of works in the field of didactic games, there is no sufficient information about their teaching capabilities, productive areas of educational use and the principles of their use in teaching practice. Therefore, the task of determining the didactic capabilities of game-based forms ofeducation on the basis of modern scientific and pedagogical means seems relevant both in theoretical and practical terms.

An important role here can be played by didactic games. Play is creativity, play is work. During the game, children develop the habit of concentrating, thinking independently, developing attention, and the desire for knowledge [2].

A variety of play activities, with the help of which one or another mental task is solved, maintains and enhances children's interest in the academic subject.

Main part. A broad understanding of the term "entertainment" comes from N.I.Lobachevsky, he believed that entertainment is a necessary means of arousing and maintaining attention; without it, teaching cannot be successful. Modern didactics, turning to game forms of teaching in the classroom, rightly sees in them the possibility of effectively organizing the interaction between teacher and students, a productive formof their communication with inherent elements of competition and genuine interest.

Professor S.A. Shmakov in his work “Student Games - a Cultural Phenomenon” (1994) sets the task for teachers: to create a game-based educational system, game programs for all academic subjects, including chemistry. Experience shows that no matter how well prepared the teacher is, no matter how well he masters the subject, students still prefer a good game to his explanation, where they will learn about the world themselves and learn from each other. They will gladly accept and assimilate the information of an adult mentor, but certainly as a participant in their game, that is, an actual carrier of information, the teacher must learn to play [3].

Game activity in the learning process

Play is the most accessible type of activity, a way of processing impressions received from the surrounding world. The game clearly reveals the characteristics of the student’s thinking and imagination, hisemotionality, activity, which develops the need for communication. An interesting game increases the child’smental activity, and he can solve a more difficult problem than in a regular lesson. But this does not mean that classes should take place only in the form of games. The game is only one of the methods, and it gives good results only in combination with others: observations, conversations, independent work. While playing, children learn to apply their knowledge and skills in practice and use them in different conditions. A game is an independent activity in which children interact with peers. They are united by a common goal, joint efforts to achieve it, and common experiences. Play experiences leave a deep imprint on the child’s mind and contribute to the formation of good feelings, noble aspirations, and collective life skills. Play is of great importance; it is closely connected with learning in the classroom and with observations of everyday life. It teaches you to independently solve game problems, find the best way to implement your plans, use your knowledge, and express it in words. Often a game serves as an occasion for communicating new knowledge and broadening one’s horizons [4].

Thus, gaming activity is an urgent problem in the learning process.

The game is attributed to a wide variety of functions, both purely educational and emotional, so thereis a need to more accurately determine the influence of the game on the development of the student and find its place in the education and upbringing system. It is most accurate to determine those aspects of the mental development and formation of the student’s personality that primarily develop in play or experience only limited influence in other types of activities.

Studying the significance of play for mental development and personality formation is very difficult.A pure experiment is impossible here simply because it is impossible to remove play activities from the lives of children and see how the development process will proceed. The most important thing is the importanceof the game for the motivational-need sphere of the child. According to the works of D.B. Elkonin, the problem of motives and needs comes to the fore. Pointing to motives is insufficient; it is necessary to find themental mechanism through which motives can have an impact [5].

The game is important for the formation of a friendly team, and for the formation of independence, and for the formation of a positive attitude towards work. All these educational effects are based on the influence that they have on the mental development of the child, on the formation of his personality. The game process allows you to form the qualities of an active participant in the game process, learn to find and make decisions, develop abilities that can be discovered in other conditions and situations, learn consciousness, originality of behavior, and the ability to adapt to the existing conditions set by the game. Learn the ability to communicate, establish contacts, enjoy communication with partners, learn to create a special emotional environment that is attractive to students. Game forms can be used in both primary and high school, and can also be used when conducting non-traditional lessons. Despite, the general recognition of the positive influence of games on the development of cognitive activity and independence of students, they have not yet found a sufficiently deep and thorough solution in the methods of teaching subjects.

The technology of game forms of education is aimed at teaching students to understand the motives of their learning, their behavior in the game and in life. To form goals and programs of

one's own, usually deeply hidden in a normal environment, independent activity and to anticipate its immediate results [7].

We can distinguish four organizational forms of gaming activity: individual, pair, single, collective, mass.

* Individual forms include the play of one person with himself or with various objects and signs.

Pairs form is a game of one person with another person, usually in an atmosphere of competition or rivalry.

* Group form is a game of three or more opponents pursuing the same goal in a competitive setting.

* The collective form is a group game in which the competition between individual players is replacedby opposing teams.

* The mass form of the game is a replicated single game with direct and feedback from a commongoal that is simultaneously pursued by many people

The technology of educational games is the practical implementation of pedagogical theory and obtaining pre-planned results in the pedagogical process. The technology of the game is based and developedon the basis of the widespread use of pedagogical ideas, principles, concepts, and rules. The specific and immediate goal of gaming technology is the spontaneously directed development of the personality of the playing schoolchild. This is a systematic and consistent implementation in practice of the concepts of innovative processes in education, pre-designed processes in education. Pre-designed on the basis of those ideas that are recognized in the world as highly significant values of the individual and society. It should be noted that an educational game is a creative repetition of a specific human activity on a deeply personal level with elements of original novelty, usefulness and significance in conditions of independence or competition with an opponent. During the game, associative, mechanical, visual and other types of memory are triggered according to the demands of the game situation, and not at the request of the teacher. To win a game- competition, you need to remember and comprehend a lot in a short period of time. In other words, a game ina lesson is a complex carrier of information [3].

A pedagogical axiom is the position according to which the development of intellectual abilities, independence and initiative, efficiency and responsibility of schoolchildren can only be achieved by introducing them to true freedom in communication. Involving them in activities in which they would not only understand and test what is offered to them as an object of assimilation, but also in fact become convinced that their success in self-development, their fate as a specialist initially depends on their own efforts and decisions.

1.2 Place of the gaming system in the chemistry course

The game takes up 1/5 of the time, without displacing practical activities. A student's learning occurs through influence on his organs of vision: demonstration of experiments, reading material (50% of what is observed remains in memory, 30% of what is read), organ of hearing - a teacher's monologue, dialogue with the teacher, with classmates (10% of what is heard remains in memory), practical activity the student himself, independent work (90% of what he did himself remains in memory). The student can either beforced to learn the necessary material or be interested. The game requires the participation of all participants to the extent of which they are capable. The educational material in the game is absorbed through all organs of information reception, and this is done naturally, as if by itself, while the student's activity is of a creative nature. There is a 100% increase in student activity in the lesson. Moreover, intellectually developed childrenoccupy a leading position, teaching those who are lagging behind in team play. It is known that the word of apeer carries more weight for a teenager than the word of a teacher. Competitiveness in work, the opportunity to consult, an acute shortage of time - all these game elements intensify the educational activity of students and create interest in the subject.

Psychological and pedagogical tasks of the gaming system:

1. Studying new material, developing skills, generalization and control of knowledge.
2. Discovering the creative potential of students.

3. Fostering collectivism and mutual assistance in solving difficult problems.

4. Peer education. Many games involve a deliberative process. In a group where strong and weakstudents are gathered, there is a process of mutual enrichment of information and skills.

5. Fostering a sense of empathy for each other.

6. Formation of practical skills.

Types of games in the pedagogical system

According to the form of activity, games can be divided into individual, pair, group, and whole-class.

For educational purposes, games that teach new material, develop skills and abilities, a lot of games ofa generalizing nature, repetition and control of knowledge.

By type: cognitive, role-playing, business, complex.

According to the form: games - auctions, defenses. Traveling through stations, press conferences, games - research [5].

Recently, a large role has been given to electronic testing and computer games in education. Testing is becoming a widespread form of knowledge testing, and a game form is used here.

Conclusion. Thus, we can conclude that the hypothesis proposed in the work that the use of games in some forms of the educational process when teaching organic chemistry in high school will increase the activity of cognitive activity of schoolchildren and their level of mastery of chemistry has been confirmed as a result of our research.

Analysis of observations of gaming activities and their results revealed that the use of gaming forms of learning is not always an effective method for strengthening or expanding knowledge.

For teachers who use games in educational activities, the following recommendations have been developed:

1. When choosing game forms of training, you should not rush and act alone,
2. You should never take other people's games on faith without proper verification.
3. You need to see for yourself the effectiveness and attractiveness of the game by playing with colleagues and well-playing children.
4. Developed games should not be immediately brought to class. It often happens that the game stops at the most interesting point and no restoration can return the previous course of the game. To prevent this from happening, you need to work with your colleagues again, see what difficulties there were, especially in group games, and check again which of the students can be the main assistant in the game.
5. No one should ever be forced to play. All people are equal before the arbitrator, and everythingmust be built on voluntary cooperation.
6. You cannot allow yourself to play down on children or follow their lead. At the same time, no matter how funny and fun the game is, it is necessary to observe all the signs of rigor and unfailing exactingness.

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