**УДК 371.3**

**Khassenova M.T**., master

Innovative Eurasian University, Pavlodar, Republic of Kazakhstan

E-mail: maral\_176@mail.ru

**Bandaev S.G.** Doctor of Chemical Sciences

Tajik State Pedagogical University named after Sadriddin Aini

Email: s.bandaev@mail.ru

**The role of teachers and students in the system of renewed education**

**focused on the formation of science literacy.**

At the present stage of development of the Republic of Kazakhstan, one of the strategic goals is to develop a competitive personality, through the creation of conditions under which graduates would have a high level of knowledge, skills and abilities. In these conditions, the school, the educational process are means of personality formation. In the modern model of education in Kazakhstan, within the framework of the updated education system, the formation of functional literacy is put forward in the first place, that is, the acquisition of ready-made knowledge, skills, and their independent production.

In this regard, the educational system of the Republic of Kazakhstan has undergone a number of reforms, one of the latest is the updated education system, the basic element of which is the formation of fundamental literacy of schoolchildren and the introduction of a new system for evaluating the educational level of students. Since one of the tasks of the educational process is the formation of students' functional literacy, which includes mathematical, linguistic, natural science, the question arises about methods, techniques and ways to help prepare students with the necessary skills and knowledge.

The required learning outcome is achieved when the organization of educational process with application of innovative technologies. In this regard, when implementing educational activities, the task of a chemistry teacher is to prepare a school graduate with a set of such qualities as a creative approach to problem solving, i.e. creativity, responsibility, developed intelligence, which is accompanied by a high level of chemical literacy, stable motivational cognitive activity, to be as trainable as possible and strive to improve throughout life. All these skills are formed in school, in the process of learning.

An urgent and socially significant task facing our society today is to find ways to update the content of education. Key figures a teacher is a competent specialist who owns all the tools, a socially mature, creative person who is able and aspiring to professional self-improvement and a student who is striving to get a quality education. A teacher of a new formation is a spiritually developed, creative person who has the ability to reflect, professional skills, pedagogical gift and desire for new things. Only such a teacher can solve the problems of updated content.

**Keywords:** Updated training program, Fundamental Literacy, Innovative teaching methods.

**Introduction** In the process of reforming the country, the education system is undergoing changes. The current reform is based on the transition of education to an updated system, which is based on the formation of fundamental literacy among schoolchildren, as well as a completely new system for assessing student knowledge [1С.24].

**Result and discussion.** The introduction of an updated education system raises a number of questions, such as “What is the fundamental difference between the new program and the previous one?” Having considered, having analyzed the new program, the following conclusions can be drawn.

**Result and discussion.** The introduction of an updated education system raises a number of questions, such as «What is the fundamental difference between the new program and the previous one?» Having considered, having analyzed the new program, the following conclusions can be drawn. The new program emphasizes the role of the student as a subject, as a person capable of independently gaining knowledge through mental activity. That is, the task of the teacher from the level of reproduction of information by the student, to move to a new stage in the formation of skills in analysis, synthesis, and evaluation. To achieve this goal, a transition from the subject - object relations to the subject - subject is necessary. This transition changes the role of both the student and the teacher. The student’s activity is self-education, through independent acquisition of knowledge, a full-fledged, and most importantly, an active member of the educational process, and the teacher is the coordinator, organizer, moderator of this process. This model of the lesson is focused on the use of non-traditional, innovative, active forms of learning. Innovative methods complement the conservative way of learning. Non-traditional forms of learning allow you to activate the activities of the student, and therefore contribute to increased cognitive activity, which, as a driving force, contributes to the formation of other necessary qualities for the development of a competent person, and also helps the teacher to organize and conduct the educational process in an interesting way. In such a learning process, a student moves from a position of a passive consumer of information to a new level - a participant in the learning process. And as a result, feedback arises, which allows the teacher to assess the level of assimilation of the material, sets up students not only for successful, but also for effective assimilation of the material, through tasks and corrective work based on the recommendations of the teacher [2].

Thus, the teaching staff faces the question «What is the role of the teacher?», «What methods and techniques should be applied for effective teaching?», «How to build a lesson to achieve goals and objectives?» .The updated program recommends the use of the “end to start” method, that is, “training with a planned, expected result”. To achieve the necessary results, the teacher needs to use such methods and techniques that would contribute to the formation of the necessary qualities. So, when using active teaching methods, it is necessary to use communicative tasks that contribute to the formation of communicative qualities. The updated program recommends the use of the «end to start» method, that is, «training with a planned, expected result». To achieve the necessary results, the teacher needs to use such methods and techniques that would contribute to the formation of the necessary qualities. So, when using active teaching methods, it is necessary to use communicative tasks that contribute to the formation of communicative qualities.

Both individual work and group work are welcome. Indeed, through such a form of training, students are educated in such qualities as mutual respect, mutual assistance, but along with these qualities, the ability to uphold their point of view is formed, which means oratorical abilities, the ability to convince and lag behind their point of view.

Creative abilities are inherent in all people, they can be especially pronounced during the school period. To do this, use game moments, situations, i.e. learning through playing.

For the modern generation, critical, non-standard thinking and the ability to make decisions are necessary; for this purpose, teachers are encouraged to use open assignments that help to activate mental activity, involving questions with ambiguous answers and finding non-standard solutions. The role of the teacher in this situation is the coordinator of the educational process. An important role is assigned to research, where students themselves are looking for answers to the questions posed. With this form of work, students develop such qualities as mental activity, the ability to analyze, creative, critical thinking, and make decisions independently.

Thus, the teaching staff is confronted with a question about teaching methods that allow them to form and develop the necessary qualities, knowledge, skills. Along with the traditional form of training, innovative methods have been widely used. Innovative methods complement the conservative way of learning.Non-traditional forms of learning allow you to activate the activities of the student, and therefore contribute to increased cognitive activity, which, as a driving force, contributes to the formation of other necessary qualities for the development of a competent person, and also helps the teacher to organize and conduct the educational process in an interesting way. In such a learning process, a student moves from a position of a passive consumer of information to a new level - a participant in the learning process. And as a result, feedback arises, which allows the teacher to assess the level of assimilation of the material, creates a favorable psychological atmosphere that forms the motivation for learning, self-learning, as well as the effective completion of tasks. The process of coordinating the activities of the student gives the teacher the opportunity not only to direct, coordinate the educational process, but to carry out work on errors through specific recommendations.

The teacher with this form of work forms in schoolchildren self-confidence, mutual respect, mutual assistance, trust, communicative qualities, promotes self-development and self-realization, emotional stability.

So, what is needed to organize an effective lesson:

• application of various forms of training

• rational use of time in the lesson

• application of elements of problem-based learning, through which students independently acquire the necessary knowledge, ie self-education

• the use of information and communication training tools to compensate for the lack of visual aids and to increase computer literacy

• cognitive interest of students in the studied subject, because only interest activates the educational process of the student. With the proper organization of the lesson, setting the necessary goals and objectives, the educational process contributes to the formation of critical thinking among students, the development of functional literacy, and research skills.

According to the presented criteria, we consider case technology to be one of the most suitable forms of training. As a chemistry teacher, I believe that the use of educational, practical, research cases is necessary. Practical cases allow not only to build skills in working with chemical glassware and reagents, but also contribute to the consolidation of theoretical material. Especially such topics as «Chemistry and production», «Chemistry in everyday life», «Chemistry in the food industry», etc. allow the student to apply the acquired knowledge in real life conditions, which is one of the points in the formation of chemical literacy.

Research cases allow the student to gain new knowledge about the situation and its solutions. When deciding on the research task, the child must find, propose his own solutions, this can be especially clearly shown in the subject "Environmental Chemistry", "Ecology and Chemistry".

Research cases allow the student to gain new knowledge about the situation and its solutions. When deciding on the research task, the child must find, propose his own solutions, this can be especially clearly shown in the subject «Environmental Chemistry», «Ecology and Chemistry». Cases make it possible to better assimilate theoretical material by deepening the material being studied, through independent study, and also allows you to detect existing knowledge gaps, form chemical literacy, allowing you to apply existing knowledge in real life conditions. Creating a case is a laborious process that requires the teacher to carefully review the material to achieve the necessary learning goal, so this process requires some preparation in creating case studies.

In our dissertation, we defined the concept of “pedagogical situation” [8]. “Pedagogical situation” is a situation consisting of real events, which entailed the appearance of a problem, a problem requiring solution. Some of them are more common, which allows you to quickly analyze and find a solution. Others are less common (abnormal), which means that much more time and effort will be spent to solve this situation. Teaching situations are based on conflict:

- negative attitude towards someone or something, that is, indignation;

- disagreement, disagreement in opinions and views

- this is not consent, disagreement;

- opposition to the actions of others

- antagonism;

- confrontation, resistance to actions

- confrontation;

- disconnection, lack of consistency between anything or someone interruption;

The actions of the teacher in solving a particular situation are determined by a certain sequence of actions or algorithm:

- establishing the fact of the reviewer;

- presentation of the situation;

- establishing the content of the situation;

- study of the situation;

-definition of the tasks of the situation;

-definition of priority tasks;

- the desire and willingness of the teacher to find ways to solve this situation;

- determination of the most acceptable solutions;

-conducting analysis of the situation and its solution; [8]

Pedagogical situations, Makhmutov MI [6 P.82], were classified according to the following criteria:

- depending on the place of events (public place, house, etc.)

- was this event planned or not, spontaneous, created artificially or naturally, etc.

-on originality, creativity

-by the criterion of organization

- by the number of participants (individual, group, subject-object, subject-subject, etc.)

-in content

Such skills as listening and highlighting the most important, correctly and reasonably expressing one’s thoughts, being social, communicative, and being active are able to be formed in schoolchildren when using this teaching technology in the lessons.

Case technology allows you to implement pedagogical goals and objectives. One of the main ones is the development of the students' intellectual base, with the subsequent ability to apply the acquired knowledge in real life situations, when solving problems, when searching for alternative ways. All these actions are possible with the development of analytical thinking. [7С.97]

The real event, taken as the basis of the pedagogical situation, can carry, most likely, an orienting character. “Therefore, in order to build a logical model necessary for making an informed decision, it is allowed to supplement the case with data that, according to the participants, could have taken place in reality” [6, С - 285]. As a result, the student is able to work out the material, supplementing it with missing information, facts, events.

For example, a developed case for students of grade 9 when studying the topic “Calcium and its compounds”

Case Type: Scientific Research

Case Type: Research

The task:

Case Content

From the most ancient times to the present day, artists, creating monumental paintings, most often use the mural technique. This word comes from the Italian "fresco", which means «fresh», «raw».

Murals are painted on wet plaster with paints that are diluted with water. Drying, the lime of the plaster is tightly connected with the paint layer.

For the preparation of paints used in the creation of frescoes, conventional pigments are used. But when they are selected, one general limitation is taken into account, due to the chemical properties of the main components of the soil.

Disassemble this situation, conduct its analysis.

Murals are painted on wet plaster with paints that are diluted with water. Drying, the lime of the plaster is tightly connected with the paint layer.

For the preparation of paints used in the creation of frescoes, conventional pigments are used. But when they are selected, one general limitation is taken into account, due to the chemical properties of the main components of the soil.

Disassemble this situation, conduct its analysis.

Of the pigments you have (red ocher, Prussian blue, zinc white, cobalt violet, kraplak, green kroner, yellow kroner), offer the artist those that can be used in fresco painting. Prove it practically.

Will the knowledge gained from this case come in handy in your future professional career?

«Thus, the case is the result of the teacher’s creative work, as this is an individual approach to the perception of a particular situation and the success of choosing a situation is determined by the degree of its conformity to the knowledge being studied, as well as the presence of non-standardness, some intrigue in it, which makes it interesting, encourages research motivation» [8 С.72].

Another aspect of the updated education system is criteria-based assessment.

The criterion scale allows, based on a comparative analysis of the acquired learning outcomes (knowledge, skills) and expected results, to evaluate students. Through assessment, educational achievements are evaluated. Criteria assessment, in contrast to the traditional form, has the advantage of a more objective determination of the level of academic achievement, thus it allows you to get the most objective information.

What is the need for a transition to criteria-based assessment? What is criteria-based assessment aimed at? The first direction is determining the role of the teacher in the educational process, determining the significance of the teacher, as well as supporting the teacher in the classroom. Determining the influence of the actions of the teacher on the effective educational activities of students through objective reflection of teacher teaching. Planning for the teacher’s future activities.

The updated training program sets the goals of the educational process, linguistic, intersubject communication is implemented, the direction for the implementation and application of innovative, active, information technologies is being implemented. It is recommended to review the planning, organization, goal setting of the stages of the lesson. The lesson has three stages: organizational, basic, reflection. The organizational stage is aimed at determining the trajectory of the educational process, that is, the lesson, which consists in motivation, updating, goal setting.

The solution to the problem, the implementation of practical tasks, the development of new material, main part of the lesson is directed. The phase of the lesson, focused on feedback, discussion, expression of thoughts, impressions - this is reflection, the end of the lesson.through the analysis and processing of information, the lesson.

**Conclusion** Based on the studied sources and the results of their own research, the authors came to the following conclusions: the case then turns into an effective educational and methodical work when it receives a comprehensive not only scientific and methodological, but also a genre study. The success of the choice of a situation is determined by the degree of its correspondence to the studied knowledge, as well as the presence of non-standardness, some intrigue in it, which makes it interesting, encourages research motivation, and therefore the question of introducing the case-study method into educational practice is currently very urgent.

The attitude of children to the learning process, the acquisition and acquisition of new knowledge, the development of the child as a person, requires teachers to organize the educational process, so that motivation is based not only on receiving positive assessments, but also on a conscious attitude towards obtaining new knowledge. But updating the content of education, transmitting the best experience in introducing new approaches to teaching and teaching methods, should also take into account the positive experience of the traditional. The synthesis of traditional and innovative teaching methods will diversify the forms of conducting classes activating the cognitive activity of students.

In general, the level of Kazakhstan's secondary general education should correspond to the tasks of development of the state and ensure its competitiveness in the modern world.

**REFERENCES**

1. Updating the content of secondary education: questions and answers, Astana, 2017
2. The state program for the development of education in the Republic of Kazakhstan for 2011-2020 /[www.edu.gov.kz/ru/zakonodatelstvo](http://www.edu.gov.kz/ru/zakonodatelstvo).
3. The teacher development program 2016, p.11.
4. Guidelines for the teacher at the Center for Humanitarian Aid “Nazarbayev Intellectual Schools”, 2015
5. The program for the teacher of the CPM AEO “Nazarbayev Intellectual Schools”, 2015
6. Makhmutov M.I. Organization of problem studies at school. - M., 1977.S. 94-96.
7. Mikhailova E.A. Case and case method: the process of writing a case. <http://www.hr-training.net/statya/mihailova_1/shtml>
8. Khasenova M.T. “Methodological foundations of the implementation of the case method in the process of teaching chemistry as a means of increasing the natural science literacy of students in secondary schools (on the example of the Pavlodar region of the Republic of Kazakhstan)”

**СПИСОК ЛИТЕРАТУРЫ:**

1. Обновление содержания среднего образования: вопросы и ответы, Астана, 2017

2. Государственная программа развития образования в Республике Казахстан на 2011-2020 годы / [www.edu.gov.kz/ru/zakonodatelstvo](http://www.edu.gov.kz/ru/zakonodatelstvo).

3. Программа повышения квалификации учителей 2016г., с.11.

4.Руководство для учителя ЦПМ АОО «Назарбаев интеллектуальные школы»,2015   
 5.Программа для учителя ЦПМ АОО «Назарбаев интеллектуальные школы», 2015

6. Махмутов М.И. Организация проблемного изучения в школе. – М., 1977. С. 94-96.

7. Михайлова Е.А. Кейс и кейс-метод: процесс написания кейса. <http://www.hr-training.net/statya/mihailova_1/shtml>.

8. Хасенова М.Т. «Методические основы реализации кейс-метода в процессе обучения химии как средства повышения естественнонаучной грамотности учащихся общеобразовательных учреждений (на примере Павлодарской области Республики Казахстан)»

**Хасенова М.Т.,** магистрестественных наук

Инновационный Евразийский университет, г.Павлодар, Республика Казахстан

Е-mail: [maral\_176@mail.ru](mailto:maral_176@mail.ru)

**Бандаев С.Г**.доктор химических наук, профессор

Таджикский государственный педагогический университет имени Садриддина Айни, г.Душанбе, Республика Таджикистан

Е-mail: s.bandaev@mail.r

**Роль учителя и обучающихся в системе обновленного образования ориентированного на формирование естественнонаучной грамотности.**

***Аннотация:*** На современном этапе развития Республики Казахстан, одной из стратегических целей является воспитание конкурентоспособной личности, через создание таких условий, при которых выпускники обладали бы высоким уровнем знаний, умений и навыков. В этих условиях школа, образовательный процесс является средством формирования личности. В современной модели образования Казахстана, в рамках обновленной системы образования на первое место выдвигается формирование функциональной грамотности, то есть получение не готовых знаний, умений и навыков, а их самостоятельное добывание.

В связи с этим в системе образования Республики Казахстан был проведен ряд реформ, одной из последних из которых является обновление системы образования, основным элементом которой является обучение базовой грамотности для школьников и внедрение новой системы оценки уровня образования обучающихся. Поскольку одной из задач образовательного процесса является обучение функциональной грамотности учащихся, которая включает в себя математические, лингвистические и естественные науки, возникает вопрос о том, какие методы, приемы и способы помочь в подготовке студенты с необходимыми навыками и знаниями.

Требуемый результат обучения достигается при организации учебного процесса с применением инновационных технологий. В связи с этим при осуществлении образовательной деятельности задача учителя химии состоит в том, чтобы подготовить выпускника школы с набором качеств, таких как творческий подход к решению проблем, c то есть креативность, ответственность, развитый интеллект, который сопровождается высоким уровнем химической культуры, стабильной мотивационной познавательной деятельностью, чтобы быть максимально обучаемым и стремиться к улучшаться на протяжении всей жизни. Все эти навыки формируются в школе, во время обучения.

Актуальная и социально значимая задача,  стоящая  перед нашим обществом сегодня,  является поиск путей  обновления содержания образования.  Ключевые фигуры педагог – компетентный специалист, владеющий всем арсеналом средств, социально зрелая, творческая личность, способная и стремящаяся к профессиональному самосовершенствованию и учащийся стремящийся получить качественное образование. Учитель новой формации – это духовно развитая, творческая личность, обладающая способностью к рефлексии, профессиональными навыками, педагогическим даром и стремлением к новому.  Только такой педагог может решать задачи обновленного содержания.

***Ключевые слова:*** обновленная программа обучения, фундаментальная грамотность, инновационные методы обучения

**Хасенова М.Т.,** магистр

Инновациялық Еуразия университеті, Павлодар, Қазақстан Республикасы

Электрондық пошта: maral\_176@mail.ru

**Бандаев С.Г.** химия ғылымдарының докторы, профессор

Садриддин Айни атындағы Тәжік мемлекеттік педагогикалық университеті

Электрондық пошта: s.bandaev@mail.ru

**Жаңартылған білім беру жүйесіндегі мұғалімнің рөлі.**

Қазақстан Республикасының қазіргі даму кезеңінде стратегиялық мақсаттардың бірі - түлектердің білімі мен машықтарының жоғары деңгейіне ие болатын жағдай жасау арқылы бәсекеге қабілетті тұлғаны қалыптастыру. Мұндай жағдайда мектеп, оқу-тәрбие процесі жеке тұлғаны қалыптастырудың құралы болып табылады. Қазақстанның заманауи білім беру моделінде, жаңартылған білім беру жүйесі аясында функционалдық сауаттылықты қалыптастыру бірінші орынға қойылған, яғни дайын білім мен дағдыларды емес, оларды өз бетінше игеру.

Осыған байланысты, Қазақстан Республикасының білім беру жүйесі бірқатар реформалардан өтті, олардың бірі - жаңартылған білім беру жүйесі, оның негізгі элементі студенттер арасында іргелі сауаттылықты қалыптастыру және оқушылардың білім деңгейін бағалаудың жаңа жүйесін енгізу болып табылады. Оқу процесінің міндеттерінің бірі математикалық, лингвистикалық және жаратылыстану пәндерін қамтитын мектеп оқушыларының арасында функционалдық сауаттылықты қалыптастыру болғандықтан, мектеп оқушысын қажетті дағдылар мен білімдермен дайындауға көмектесетін әдіс-тәсілдер мен әдістер туралы сұрақ туындайды.

Оқу процесін инновациялық технологияларды қолдана отырып ұйымдастырғанда қажетті оқу нәтижелеріне қол жеткізіледі. Осыған байланысты, оқу іс-әрекеттерін жүзеге асыру кезінде химия пәнінің мұғалімінің міндеті - мектеп түлегін мәселелерді шешуге шығармашылық көзқарас сияқты бірқатар жиынтықтармен даярлау, яғни. химиялық сауаттылықтың жоғары деңгейімен, тұрақты мотивациялық танымдық белсенділікпен бірге жүретін шығармашылық, жауапкершілік, дамыған интеллект, мүмкіндігінше дайындалып, менің өмірімді жақсартуға тырысу. Барлық осы дағдылар мектепте, оқу процесінде қалыптасады.

Бүгінгі қоғамның алдында тұрған өзекті және әлеуметтік маңызды міндет - білім мазмұнын жаңарту жолдарын іздеу. Негізгі сандар: мұғалім - бұл қаражаттың барлық түріне ие құзыретті маман, кәсіби тұрғыдан жетілуге ​​қабілетті және сапалы білім алуға ұмтылатын әлеуметтік жетілген, шығармашыл тұлға. Жаңа формацияның мұғалімі - бұл рухани дамыған, ойлау қабілеті, кәсіби шеберлігі, педагогикалық дарыны және жаңасына ұмтылуы бар шығармашылық тұлға. Тек осындай мұғалім жаңартылған мазмұндағы тапсырмаларды шеше алады.

**Түйінді сөздер:** жаңартылған оқу бағдарламасы, негізгі сауаттылық, оқытудың инновациялық әдістері