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Language competence of students forming methods and technologies

Abstract. *The proposed article discusses the methods and technologies for the formation of students' language competence skills in chemistry. A differentiated teaching method contributes to the formation of language competence in the education system and changes in the quality of knowledge. The content of methods and technologies for the formation of language competence skills and didactic opportunities for teaching chemistry, which are updated in accordance with the requirements of the time, are studied. The formation of students' language competence skills in subjects of the natural sciences, including chemistry, has its own characteristics.*

Trilingualism allows students to strive for global changes, exchange information, expand their worldview and master the achievements of science and technology more deeply. An experiment conducted for this purpose will help in the future to properly organize independent activities in the process of their preparation in the formation of personality. As a result of the experiment, the results of level indicators were determined for four skills of students in using the methods of frontal, group, and individual work.

Due to interdisciplinary integration, it is possible to increase the level of independent work of the student, ensuring the depth of the content of the material and its conscious assimilation. In terms of integration with the English language, the methodology of teaching chemistry provides an increase in the level of formation of bilingual information and communication competencies of students, which is expressed in a sufficient level of bilingual and integrative knowledge, a high level of information and communication skills. To prepare the individual, it is necessary to observe the state of organization of students' independent activities. The effectiveness of the methods used in the formation of language competence skills in students combining chemistry in three languages is shown.

Keywords: *language competence, skills, trinity, interethnic, global, experiment, frontal.*

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Introduction

The Law of the Republic of Kazakhstan «On Education» emphasizes that «the main task of the education system is the necessary conditions for high-quality education aimed at the formation, development and professional improvement of the individual on the basis of national and universal values, achievements of science and

practice; the development of creative, spiritual and power capabilities of the individual, the formation of solid foundations of morality and a healthy lifestyle, enriching horizons by creating conditions for the development of individuality» [1].

Using the updated educational program, the student better understands the concept of new technology and language competence. Language

competence contributes to the complete mastery of the language skills of students in speaking, listening, reading and writing. The teacher is constantly working to develop the student along with knowledge, skills and abilities. The experience of students' creative activity in each lesson is directly related to language competence. The teacher does not forget that the work on the formation of the language competence of students in the educational process is an educational goal and related activities. And competence is the ability to apply the knowledge and skills acquired within the framework of a specific topic in the educational process to solving certain practical and theoretical problems in practice, in everyday life [2].

Every message of the head of state often speaks about trilingualism. In one of my regular messages, I propose to begin the phased implementation of the cultural project «Trinity of Languages» of our president. Kazakhstan should be recognized worldwide as a cultural country whose population uses three languages. This is the Kazakh language - the state language, Russian is the language of interethnic communication and English is the language of successful entry into the global economy « [3].

Within the framework of updating the content of education, training has a great impact on the development of creative values and skills, the improvement of the student's personality in the individualization of the educational process, the formation of independent student activity, strengthening the relationship of subjects with each other. That is, preparation for creative intellectual work. Chemical education is the most important and large area of general secondary education. When studying the discipline, it is necessary to take into account the main tasks: the formation of a scientific worldview of a natural science discipline and a scientific image of the environment; the development of chemical language and teaching the ability to think through chemical cognition of phenomena occurring in the environment; promotion of the use of chemical knowledge and achievements of chemical science in everyday life.

Materials and techniques

The effectiveness of these approaches depends on many factors. Among the most important things are the opportunities and interests of the student. Stages characterizing the student's activity during the lesson: directed motivational stage. The goal and ways to achieve it, depending on the specific situation. (What conditions are we in? What are we doing to do this? How will we do it?); the performance and operational period. This is the stage of achieving the goal. Implementation of the plan, modeling; evaluation and reflexive stage. Has the goal been achieved? How is it achieved?

Improving the creative basis of learning at the standard level, bringing the content of educational material in the curriculum from the mandatory to the possible level. Differentiated training is carried out, in connection with which the cognitive needs of each student are taken into account. The levels of education are mobile and variable (a - low, B - medium, c - high), as the student is constantly improving. The triple level, if possible, covers all students in the class [4].

At the same time, the integrated study of chemistry based on the informatization of subjects of Russian and English is effective:

- Joint training in translations of the main terms used in chemistry in English and Russian, working with a glossary;
- Reasonable use of structural and functional mechanisms in the integration of disciplines;
- Interdisciplinary integration, ensuring the harmony of the three languages while maintaining continuity of content.

Through interdisciplinary integration, an increase in the level of independent work of students is achieved, ensuring the depth of the content of the material and its conscious assimilation (table 1). The table shows the levels of knowledge development and requirements for students.

Here, intensification, that is, a qualitative increase in the training of information, mainly computer tools, in accordance with certain methodological principles, is of great importance.

Table 1. levels of knowledge acquisition and requirements for students:

Levels of Education	Requirements for students
First level. Reconstruction and memorization. Repetition of the content of educational material.	The ability to show, identify, name, define
Second level. Applying knowledge of the model in familiar situations. Working by the rules.	Measurement, interpretation, assembly according to the finished scheme, description, comparison, compliance with the rules.
Third level. Application of knowledge in unknown situations. Creative work.	The ability to answer a problem, speak out, identify root causes, analyze information and find the information you need.

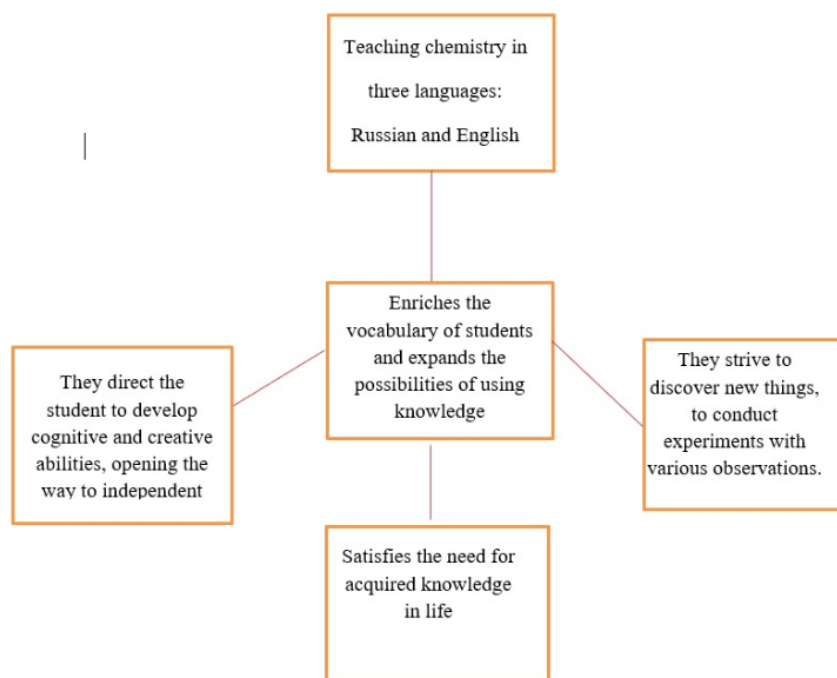
Optimal ways of integrating chemistry education can be implemented with the help of information and communication technologies [4].

The formation of high-level thinking skills and their application is an actual aspect of the curriculum. One of the important ways of forming these thinking skills is argumentation. Argumentation is important for starting, conducting and evaluating any discussion, especially in teaching chemistry, since it has one solution to the task at hand, but can be performed by various means and methods.

The achievable possibilities of using language skills in four different combinations with simultaneous teaching of students in three languages during the ascertaining experiment are shown (Figure 1).

The methodology of teaching chemistry in conditions of integration with the English language provides an increase in the level of formation of bilingual information and communication competence among students, which is expressed in sufficient assimilation of bilingual-integrative knowledge, the formation

Figure 1. Achievable opportunities for simultaneous teaching of chemistry in three languages.



of information and communication competence at a high level.

The bilingual method helps to use the communicative capabilities of the English language to teach students chemistry. Therefore, it helps to increase the interest and motivation of students to study chemistry. Today, a high-quality command of English by schoolchildren is a vital necessity. After all, to obtain high-quality theoretical and practical education, intensive development of science and technology in the world requires fluency in English, the formation of skills and abilities. This will help to form students' cultural communication skills.

Important rules of integrated language and subject learning:

- use of active methods in each lesson;
- use of visual aids;
- use of authentic materials;
- language support for students.

The use of methods and assets during classes is very helpful in achieving learning goals. A number of them: the CLIL method, the Fill Gap method, Who is faster? - the game, Tic tac toe method, Venn diagram, column methods, Matching activity. With the introduction of trilingualism in these methods, great support was given to students in improving their trilingualism through an interesting and productive description of the chemistry lesson. For these purposes, it is planned to introduce interdisciplinary links into the system of training future specialists for modern education.

In subject-integrated lessons, it is equally important to develop language skills and subject knowledge, most often such a lesson is based on a four-step scheme: 1. Text processing; 2. Understanding and organization of the acquired knowledge; 3. Understanding of the language text; 4. Tasks for students.

Table 2. Short-term plan «Chemical equipment»

Date:	Full name of the teacher:	
Grade: 8	Attended:	Absent:
The theme of the lesson: the goal to achieve Сабақтың мақсаты Lesson objectives:	CHEMICAL EQUIPMENT	
Achieving goals in the lesson (link from the lesson plan) Lesson objectives:	Chemicals - general information about equipment, familiarity with English names Creation of conditions for obtaining complete knowledge about chemical equipment. Learn English names of chemical equipment Спиртшам-burner Өлшеуіш цилиндр -graduated cylinder Шыны таяқша - stirring rod Стақан - beaker Сынауық қысқыш -test tube clamp Таразы - balance Дөңес колба - volumetric flask Құты – funnel Тұрғы (штатив)- stand Үшбұрышты колба-Erlenmeyer flask Тұрғының қысқыштары - ring clamp Сынауық - test tube Диалог үшін пайдалы сөз тіркестер: Name this chemical equipment	

Criteria for evaluation	Participants will evaluate chemical equipment depending on the ability to pronounce English, Russian and Kazakh names by heart. Knows how to distinguish the names of the elements indicated in each card, call them in English	
Language objectives:	Subject vocabulary and terminology: Көзілдірік-Goggles Спиртшам-burner Өлшеуіш цилиндр-graduated cylinder Шыны таяқша-stirring rod Стақан -beaker Сынауық қысқыш-test tube clamp Таразы-balance Дөңес колба-volumetric flask Құты –funnel Тұрғы (штатив)- stand Үшбұрышты колба-Erlenmeyer flask Тұрғының қысқыштары-ring clamp Сынауық-test tube Useful phrases for dialogue: Name of this chemical equipment	
Educational values	Training in accordance with international standards To raise a generation capable of establishing good relations with people of different nationalities	
Interdisciplinary communication	Chemistry and English	
Previous knowledge	Chemistry, chemical and physical phenomena	
Lesson progress	Types of exercises planned for the lesson: Эпиграф: «Элементтер – химия негізі» Сәлемдесу. Good afternoon dear children! I'm very glad to see you! How are you today? What date is it today? Who is absent today? Оқушылардың назарын сабаққа аудару. Топтарға бөлу: I-топ; II-топ; Алдыңғы білімді тексеру: «химиялық диктант»: Оқушылардан химиялық терминдер мен ұғымдар туралы алған білімдері бойынша жазбаша жұмыс алу; Жаңа тақырыпты тақтаға жазу	Resources Әр топ стикерге өз аттарын жазады
Organizational moment 5 min	Epigraph: «Elements are the basis of chemistry» Greetings. Good afternoon dear children! I'm very glad to see you! How are you today? What date is it today? Who is absent today? To attract students' attention to the lesson. Division into groups: Group I; group II; Check previous knowledge: «chemical dictation»: Receive written papers from students on the knowledge of chemical terms and concepts; Write a new topic on the board	Each group writes its name on a sticker.

The main part 30 min	The teacher shows images of chemical equipment on an interactive whiteboard. From the sheets with names of dishes given to students in advance, mark the names of each dish in three languages.		Pictures
	№	A set of terms for chemistry	English translation
	1	Көзілдірік	Goggles
	2	Спиртшам	burner
	3	Өлшеуіш цилиндр	graduated cylinder
	4	Шыны таяқша	stirring rod
	5	Колба қысқыш	crucible tongs
	6	Стақан	beaker
	7	Сынауық	test tube
	8	қысқыш	clamp
	9	Таразы	balance
	10	Дөңес колба	volumetric flask
	11	Құты	funnel
	12	Фарфор табақшасы (отбақыраш) және езгіш	mortar and pestle
	13	Сынауық қойғыш (тұғыр)	test tube rack
	14	Жуғыш бөтелке	wash bottle
	15	Тұрғы (штатив)	stand
	16	Үшбұрышты колба	Erlenmeyer flask
	17	Тұрғының қысқыштары	ring clamp
	18	Сынауық	test tube
	19	Сүзгі қағаз	filter paper
	20	Өлшеуіш пипетка	volumetric pipet
	<p>Task 1: Teacher's cards for each group shows pictures of dishes, each group through the competition calls their names in three languages. Student draws containers with chemicals in workbooks and writes their names in three languages.</p> <p>Task 2: Each group competes by showing each other images of instruments and naming them. Each team will show each other the drawings and compete with each other.</p> <p>Task 3: Demonstrates the equipment provided by the teacher in three languages.</p>		
Assigning lesson	a	<p>T: What are glasses for in the laboratory? S: 1.Goggles- protects eyes from chemical splashes 2. Glasses are put on to prevent chemical reagents from getting into the eye</p> <p>T: Why it stirring rod is used? S: 1.stirring rod- used for stirring 2. Stirring rod are chemical equipment T: why it test tube is used? S: Test tube- open tube used to hold liquids</p>	Terminological Dictionary

Homework 1 min	Remember the terms	
Conclusion 5 min	Reflection through the «Two stars, one wish» strategy	Traffic light

According to the above short-term lesson plan, the possibility of language competence in intersubject communication when teaching «Chemical Engineering» was considered (Table 2).

During the detecting experiment, it is planned to monitor the state of the organization of students' independent activity to prepare a personality in the future.

Grouping of types of independent work according to its content and the purpose of the lesson [5].

- The acquisition of new knowledge, that is, types of independent work that help to comprehensively analyze a new topic:

- You can use the glossary for each topic in chemistry.

- Consolidation of new knowledge, performing various exercises, experiments, reports, textbooks, practical tests.

- The use of independent work, which leads to the development of creative activity of students, the formation of curiosity [6].

Attention to the problem of organizing independent work through the correlation of the content of the textbook and textbooks. The more the child searches, the stronger his activity. Wanting to solve the desired problem, the student rushes forward.

In the formative experiment, work is carried out using new technologies with the binding of textbook and textbook materials. In order to create conditions for the conscious assimilation of educational material by students, the content of each text is correlated with additional material in the textbook, by performing various tasks and tasks and experimentation.

Through the work done by the student, you can see how much he is trained and improving, able to express himself in various situations. Linguistic (communicative) competence can be understood as a person's ability to communicate through language in real life situations. Communicative

competence in teaching a particular language is a complex concept, which is one of the main categories on which it is methodically based and should be developed, and consists of several components [7].

To achieve the objectives of the lesson, it is necessary to use four types of language skills: reading, listening, pronunciation, writing in various combinations [8].

Methods applied to tasks that contribute to the development of reading skills: «Make a map of the studied topic», «Find and read the right sentence or word in the text».

Methodology applied to tasks that contribute to the development of listening skills: the use of video materials related to topics.

Methods applied to tasks that contribute to the development of pronunciation skills « «Dictionary» in three languages, depending on each topic «»What is depicted in the picture?», Poster protection in the «Fishbone» method, «Problem question».

Methods applied to tasks that contribute to the development of writing skills: formation using the techniques of «Chemical dictation», «Writing with memorization».

The main aspects of frontal (collective) work:

- Create assignments for students based on Bloom's 6-level taxonomy, focusing on their generalization, analysis and evaluation, and not on their knowledge, understanding and application;

- Pay attention to the development of tasks that the student can use in real life, in addition to performing tasks in accordance with the requirements of the standard;

- Changing the structure of the lesson in teaching to implement logical thinking, critical thinking, i.e. the use of active learning strategies, changing the situation every 10 minutes to increase the motivation of students.

- Preliminary warning of the student's algorithms when issuing a task;

- Teach to perform the task carefully and make sure that the work done is correct by performing experimental tasks, small laboratory studies, self-assessment.

If such actions are performed, the path to the formation of the student's knowledge at a high level will be opened.

Group work is the main approach to the formation of language competencies.

The group work manual says: «group work involves solving more complex tasks, not tasks that can be solved individually. Any team should be guided by general rules that all its members know and understand. It is necessary for each member of the group to know what is expected of him, how work will be distributed and support provided, as well as how results will be achieved» [9].

For example, in the course «General Characteristics of Metals», ninth grade students are divided into 3 groups: «Chemist», «Biologist», «Geographer» and using the «Fishbone» method, each group describes metals in accordance with the names of their groups and explains their importance.

Exercise 1.

Group 1 - Chemical Significance

Group 2 - Biological Significance

Group 3 - Geographic Significance

Descriptor:

1. Records reactions related to the chemical properties of metals.

2. Explains the effects of metals on the human body

3. Determines the distribution of metals by regions of Kazakhstan

FA. Assessed by self-assessment.

Strategies of modern widely used learning technologies in intellectual and creative comprehension and development of the subject in group work: «Zhigso - collective learning», «Wise owls», «Mosaic or bee hive».

For example, in the 8th grade «Oxides. Combustion» in the organization of group work related to the distribution of students into several groups and assigning different formulas and names to groups, each group collects various drawings, tables, information, draws a poster,

a cluster and conveniently places them on the board defends the collected data, listens to other groups, receives additional information about the oxide, the following techniques are also used in the lesson: «Reasoning in pairs», «Aquarium», «Clusters» «Think, connect, discuss», «Swinging question», «Free letter», «Circle of questions», «Three questions about names», «Hot chair». Also, when organizing a game in a lesson, it is necessary to create such conditions for students to help each other, unite with each other. Then the lesson performs not only educational, but also educational function [10].

Application of the methods of STO technology in chemistry in the 9th grade. ZHIGSO, the method of signs, Venn diagram, five-line verse, grouping methods are used. For homework «who is faster?», organization in a playful way.

Results and discussion

The 9th grade was taken into the experimental experiment. There were 24 students in the experimental class, 23 in the control class. During the ascertaining experiment, work was carried out on both classes, such as conversations, questionnaires, conversations, and communication with students. In the course of this ascertaining experiment, students were given independent work. The characteristics of the levels of formation of students' language skills are considered by teachers[11].

1-high level. Students who can formulate their own ideas and try to use chemical language. They can bring arguments to your address. Uses theoretical knowledge in activities. In the course of arguing his opinion, he gives examples from everyday life, objects of the environment.

2-intermediate level. Students understand questions and tasks and try to answer him. But I can't figure out the game. The use of chemical language is low. Not ready to use theoretical knowledge in any situation.

3-low level. The game can't stomach it and has little evidence. Cannot use chemical language. He did not know how to correlate theoretical thought with local materials at all. Poor theoretical preparation.

Table 3. Results of indicators of levels in the experimental and control groups.

s/n	Levels	Control group	Experimental group	Dynamics of changes
1	High	1	4	+3
2	Medium	7	14	+7
3	Low	15	6	-9
4	Number of students	23	24	

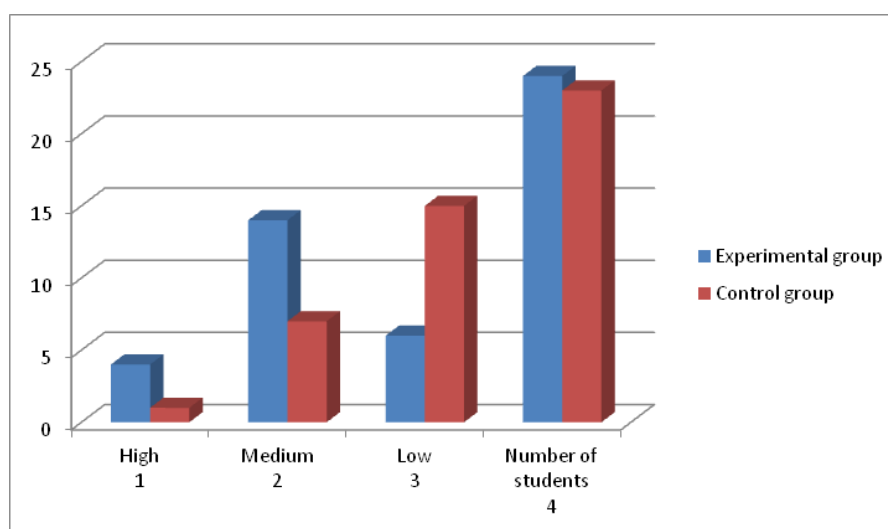
**Figure 2.** the result of the indicator for four skills of students using frontal, group, individual methods and techniques.

Table 3 below shows the results of the levels in the experimental and control groups.

The characteristics of the levels of formation of the language skills of students were organized in parallel classes. The results of the lesson are summed up (Figure 2).

The table shows that the results of the «High», «Medium» levels have increased, and the «Low» - on the contrary. That is, it shows the effectiveness of methods and techniques used in the formation of students' language competence skills in combination with the three languages of chemistry.

Conclusion

Thus, the knowledge gained at school on the methods and technologies of forming students' language competence skills in chemistry remains in the minds of every child, they try to fulfill them, invest the knowledge gained in their future, use it in the future of the country. Considering that

modern international relations have developed at a high level and the number of students studying abroad has recently increased, it should be borne in mind that the knowledge gained by each student is realized with benefit and is valid not only in their own country, but also at the world level.

The teacher's skill determines the search for simple ways, ways of mastering the language in order to form and interest the student in mastering the standard program for studying chemistry in combination with three languages. Students of the school often use Russian and English together with native speakers. This is a requirement of time, a necessity of life.

We believe that we need to work hard to achieve the goal we are pursuing in English. In any case, it is obvious that this program is a requirement of today. Therefore, teaching natural sciences in English opens up new opportunities. We believe that young people can walk the streets of modernity.

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Студенттердің тілдік құзыреттілігін қалыптастыру әдістері және технология

Аңдатпа. Ұсынылған мақалада химия сабақтарында оқушылардың тілдік құзыреттілігін қалыптастыру әдістері мен технологиялары қарастырылады. Оқытудың сараланған әдісі білім беру жүйесінде тілдік құзыреттілікті қалыптастыруға және білім сапасын өзгертуге ықпал етеді. Тілдік құзыреттілік дағдыларын қалыптастыру әдістері мен технологияларының мазмұны және уақыт талаптарына сәйкес жаңартылатын химияны оқытудың дидактикалық мүмкіндіктері зерттеледі. Жаратылыстану ғылымдары, оның ішінде химия пәндері бойынша оқушылардың тілдік құзыреттілік дағдыларын қалыптастырудың өзіндік ерекшеліктері бар.

Үштілділік оқушыларға жаһандық өзгерістерге ұмтылуға, ақпарат алмасуға, дүниетанымын кеңейтуге, ғылым мен техниканың жетістіктерін тереңірек игеруге мүмкіндік береді. Осы мақсатта жүргізілген эксперимент болашақта жеке тұлғаны қалыптастыруда оларды дайындау процесінде тәуелсіз қызметті дұрыс ұйымдастыруға көмектеседі. Эксперимент нәтижесінде фронтальды, топтық және жеке жұмыс әдістерін қолдану кезінде студенттердің төрт дағдысы бойынша деңгейлік көрсеткіштердің нәтижелері анықталды.

Пәнаралық интеграцияның арқасында материалдың мазмұнының тереңдігін және оны саналы түрде игеруді қамтамасыз ету арқылы студенттің өзіндік жұмыс деңгейін арттыруға болады. Ағылшын тілімен интеграциялау тұрғысынан химияны оқыту әдістемесі оқушылардың екі тілді ақпараттық-коммуникативтік құзыреттілігінің қалыптасу деңгейін арттыруды қамтамасыз етеді, бұл екі тілді және интегративті білімнің жеткілікті деңгейінде, ақпараттық-коммуникативтік дағдылардың жоғары деңгейінде көрінеді. Жеке тұлғаны дайындау үшін студенттердің өзіндік іс-әрекетін ұйымдастырудың жай-күйін бақылау

қажет. Химияны үш тілде біріктіретін оқушыларда тілдік құзыреттілік дағдыларын қалыптастырудың қолданылатын әдістерінің тиімділігі көрсетілген.

Түйін сөздер: тілдік құзыреттілік, Дағдылар, Үшбірлік, ұлтаралық, жаһандық, эксперимент, фронтальды.

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Формирование языковой компетенции студентов: методы и технологии

Аннотация. В предлагаемой статье рассматриваются методы и технологии формирования языковой компетенции учащихся на уроках химии. Дифференцированный метод обучения способствует формированию языковой компетенции в системе образования и изменению качества знаний. Изучается содержание методов и технологий в формировании умений языковой компетенции и дидактические возможности обучения химии, которые обновляются в соответствии с требованиями времени. Формирование навыков языковой компетенции учащихся по предметам естественных наук, в том числе химии, имеет свои особенности.

Трехязычие позволяет учащимся стремиться к глобальным изменениям, обмениваться информацией, расширять свое мировоззрение, глубже осваивать достижения науки и техники. Проведенный с этой целью эксперимент поможет в дальнейшем правильно организовать самостоятельную деятельность в процессе их подготовки в формировании личности. В результате эксперимента были определены результаты уровневых показателей по четырем умениям студентов при использовании методов фронтальной, групповой и индивидуальной работы.

Благодаря междисциплинарной интеграции можно повысить уровень самостоятельной работы студента, обеспечив глубину содержания материала и его осознанное усвоение. В плане интеграции с английским языком методика преподавания химии обеспечивает повышение уровня сформированности билингвальной информационно-коммуникативной компетенции учащихся, что выражается в достаточном уровне билингвальных и интегративных знаний, высоком уровне информационно-коммуникативных умений. Для подготовки личности необходимо наблюдать за состоянием организации самостоятельной деятельности студентов. Показана эффективность используемых методов формирования навыков языковой компетенции у учащихся, сочетающих химию на трех языках.

Ключевые слова: языковая компетенция, навыки, триединство, межнациональный, глобальный, эксперимент, фронтальный.

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