

The poster features a background image of the United States Capitol building at dusk, with its golden dome and classical architecture illuminated. The building is reflected in a pool of water in the foreground. In the top right corner, a portion of the American flag is visible, appearing to wave. The entire image is framed by a thick red border.

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PREVENTION OF DISPUTES BETWEEN TEACHERS AND STUDENTS

Allabergenova Shodiyona Maqsudbayevna

Director of general secondary school No. 60 of Ellikkala district
of the Republic of Karakalpakstan

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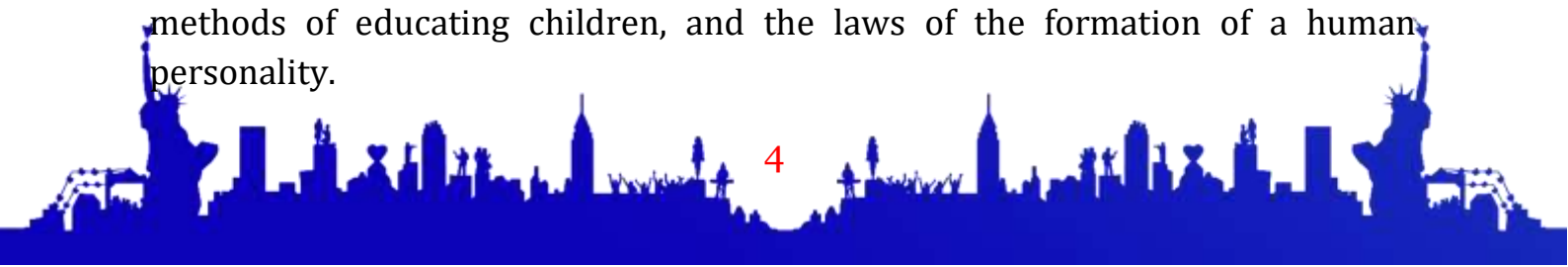
Abstract: This scientific article describes opinions on the prevention of misunderstandings and conflicts between teachers and students in the educational system. Also, the positive and negative aspects of this situation for the quality of education are revealed.

Key words: Educational process, educational quality efficiency, problem and conflict, methodology.

In order to become a true master of each direction, a person must have natural abilities, certain physical and mental reforms, thorough training, personal preparation and certain personal qualities. What kind of relationships should we pay attention to when directing to the pedagogical goal. A person who chooses the profession of pedagogy must first be healthy, be able to pronounce words correctly and well, be calm and composed, and be able to control oneself in dealings with others. Also, the presence of personal qualities such as liking children, willingness to work with them confidently, politeness, broad-mindedness, organization, and demandingness towards oneself and others also indicate a person's suitability for pedagogical work.

In order to achieve his goal, the pedagogue should have the following qualities in order to enter into a relationship with students. Love of children and interest in working with them, love of pedagogical work, psychological and pedagogical acumen and observation, organizational ability, truthfulness, sincerity, demandingness, determination and striving for a goal, self-control. A teacher should be able to pay special attention to character traits of students in the process of pedagogical goal-oriented attitude.

Working together to achieve the goal. In the field of education, we will achieve the goal. We must strive together. The employees who organize education are pedagogues, so it is appropriate to work together with them for the effective implementation of education. It is known that in order to achieve the goal in the pedagogical profession, it is not enough for the teacher to be knowledgeable, to have deep knowledge of this or that subject. A teacher is also education. It is necessary for him to know to what extent and with what methods to learn a subject, taking into account the age and mental characteristics of children, the methods of educating children, and the laws of the formation of a human personality.



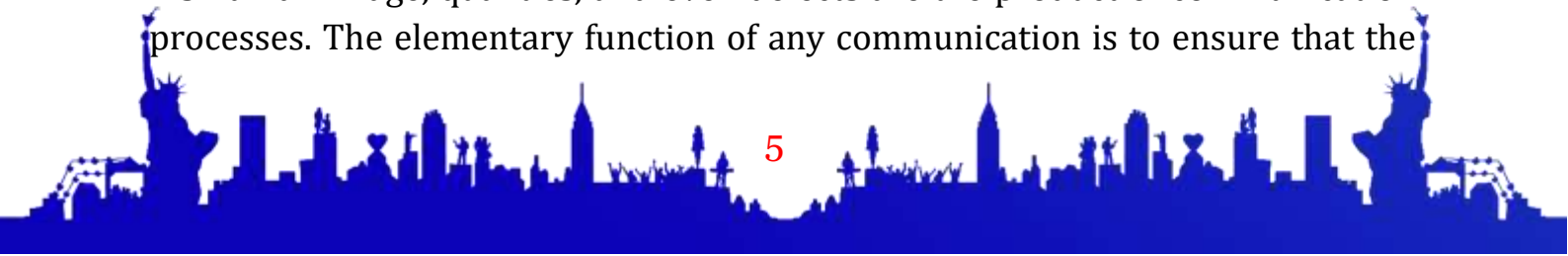


The pedagogue knows how to work with the team, the same treatment in the process of responding to the group's demands, working with parents is an integral part of the work system of the group leader. Working with parents requires gentleness, patience, consistent and strict attention of the pedagogue to establish a reliable and working relationship with them. The general and tasks of education are successfully solved through the parents' team. If the head of the class warns the parents by forcing them to work individually with the students who have difficulty in education, they will not face difficulties in achieving the goal.

The teacher's negative attitudes, the mistakes made by the teacher in the evaluation of the students' knowledge, the mistakes made in the evaluation lead not only to the change of the evaluation components, but also to the change of the entire learning activity. They reinforce the flaws inherent in this system, making it inferior or unattractive. Positive results were obtained, compared with the student himself. It is necessary to compare children's knowledge in such a way that it supports children to achieve the best results and improve their personality, without lifting someone up and putting others down. A teacher should pay attention to the character of each student in order to prevent conflicts and contradictions. Pedagogy should be able to overcome teacher's conflicts so that conflicts, conflicts, confrontations do not arise between pedagogues and students. In a modern way, we need to find the right solution for our conflict management.

Our society is wide-ranging and we can meet people of different characters there. Interpersonal conflicts are definitely manifested in activities. For example, we will see in the example of a group. Imagine we have talented individuals in one group. They are able to express their independent opinions by mastering each content well, and due to the wide range of opinions, conflicts, major disagreements and conflicts arise between them. Each group member can prove the correctness of his opinion, in such cases, conflict management is eliminated by the teacher. We can see conflicts between individuals in every field. If people work on themselves, can they prove their point, they will also find solutions to conflicts.

Boredom from any activity is possible, but a person does not get tired of communication, especially its informal, sincere, direct form, good interlocutors are always spiritually stimulated. In fact, the social experience of each person, his human image, qualities, and even defects are the product of communication processes. The elementary function of any communication is to ensure that the





interlocutors understand each other. In order to prevent pedagogical conflicts, one person speaks, the other equalizes and listens. The effectiveness of communication depends on the compatibility and complementarity of these two aspects. One of the misconceptions is that when a person is taught to interact or communicate, he should only be taught to speak and use logically based words. They teach to speak secretly. His second side, listening ability, is not given much attention. When the famous American speaker and psychologist Dale Carnegie said that "a good conversationalist is not a conversationalist who knows how to speak well, but a conversationalist who knows how to listen well", he meant the development of these skills in people.

The teacher communicates with people - young children - who are just entering life and are forming as a complete person. As a result of some random behavior of the teacher, the opinion of the students about him can have a negative effect on the educational process and complicate the work of the teacher. Usually, such conflicts last a long time and are resolved in favor of the teacher. In order to protect the teacher's reputation, adults sometimes destroy the student's dignity and demand forgiveness from the student, although the reason for this conflict was the teacher's wrong behavior. The teacher's work does not meet the requirements of moral education. It is necessary to approach each of them individually in dealing with children. If the teacher and student listen to each other, they will educate themselves. So, the process of listening is not as passive as many people imagine. The ability to listen inspires the speaker, inspires him, creates an opportunity for the formation of new ideas.

Sincerity is one of the best and noble qualities of a person, we often do not pay attention to the meaning of this word, which is used almost every day. In fact, when we translate the words "sincerity" and "sincerity" into Uzbek, the meanings "one who can be like-minded and listen to others, aware" come out. Sincerity, which is one of the virtues known as morality, is a big dream. Sincerity appears in the interaction and communication of people. How many people communicate with each other every day. What is the difference between sincere and open-mindedness? Your Excellency, people are equal, big and small, they strive to earn their living, support the truth, strive for enlightenment, and respect themselves. In the process of dealing with children, if we use the right words, volunteerism, tolerance, knowledge, impartiality, the young generation we are raising will develop high qualities. We should teach children to do good, to show virtue, to greet, to respect adults, to show respect to children, and to form feelings of love.

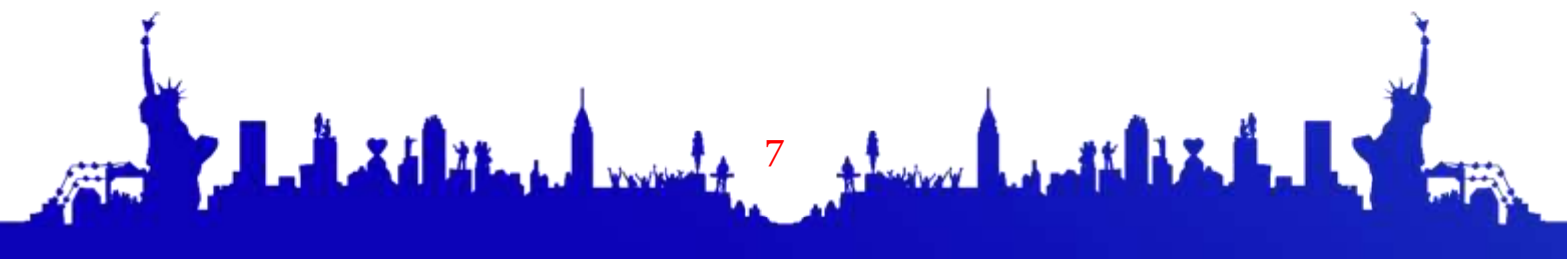




As a conclusion, we can say that our ancestors always lived with good intentions, good dreams, and tried to leave behind good children, good students, good poets, and a good name. Only good people can do good to people. Children should be taught noble attitudes: love for the motherland, piety, fortitude, virtue, courage, patience, conscience, modesty, chastity, loyalty, friendship, humility, words, courage, humanity, hard work, truthfulness, asking the right question. It is our pedagogue's and parents' duty to inculcate such qualities in their minds during the educational process.

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DISCURSIVE ELEMENTS AND THE CATEGORY OF POLITENESS

Djalilova Zarnigor Obidovna

EPS teacher, English Language Department

Bukara State Medical Institute named after Abu Ali ibn Sino

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Abstract: The article is devoted to the category of politeness as a central communicative category, since it is the regulator of communicative behavior that plays the most important role in ensuring and organizing harmonious communication.

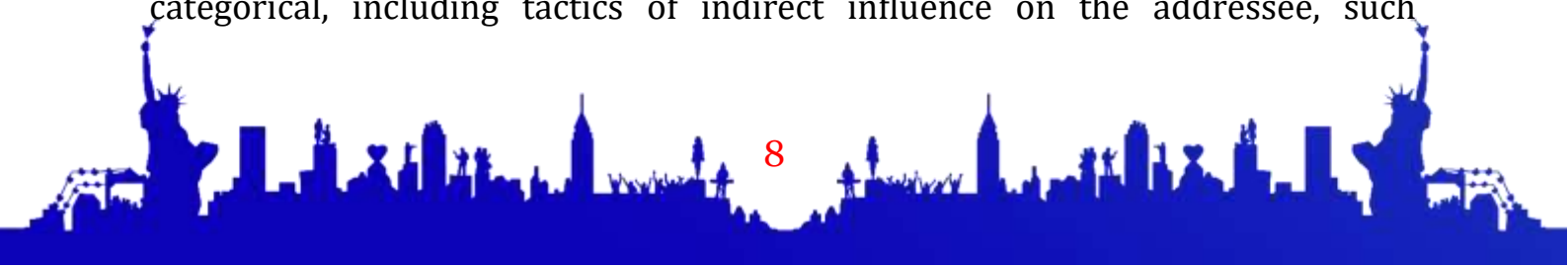
Key words: gender, communicative behaviour, discourse, male, female, speech behaviour, gender linguistics

Introduction

In modern gender linguistic studies, the focus is on the analysis of various language forms, behavioral strategies in relation to the social role of men and women. At the same time, gender is considered as a social construct, a product that arises in the process of communication [4; 11], where “male” and “female” linguistic forms are separated from real men and women and are considered as “linguistic resources for constructing gender in social practice” [1: 134]. Gender studies in linguistics are based on three main models for studying male and female speech behavior: the dominance model (an explication of gender inequality in communication in accordance with the dominant social status of men) [10; 12], a deficit model (emphasizing the inferiority of the female language, considered as a deviation from the norm) [15] and a difference model (positioning the normativity of the male language and the inferiority of the female language) [18]. At the same time, the works of scientists also interpret the modern paradigm, which emphasizes the dynamics of gender differences in the language, where gender as a social category is constructed in the process of communication and is a product of discourse [14].

Materials and methods

In sociolinguistic gender studies, the attention of scientists is focused on the analysis of etiquette communication, which emphasizes that female speech behavior is aimed at establishing and developing personal relationships, in contrast to male, which is seen as a means of receiving and transmitting information [14: 3]. Women's speech behavior is defined by researchers as less categorical, including tactics of indirect influence on the addressee, such





politeness strategies as showing attention, sympathy, approval towards the interlocutor [7: 160; 18].

Given the understanding of discourse as a social practice, one can observe an analogy between the concepts of "discourse" and "style", so the stylistic analysis of speech can be interpreted as a discursive analysis. It was in the sense of "functional style" that the term discourse began to be widely used in the early 1970s. Yu. S. Stepanov speaks about this in his work. "Alternative world. Discourse, Fact and Principle of Causality" (Stepanov, 1995), believing that the main reason for replacing the term functional style with the concept of discourse lies in the Russian linguistic tradition, where functional style meant a special type of texts, while the Anglo-Saxon tradition had nothing of the kind, since there was no stylistics as a special branch of linguistics. The strategies of politeness, identified with speech etiquette, are described in linguistic studies as expressions of consent, informality and awareness, which are aimed at maintaining communication in accordance with the social roles and role positions of the interlocutors, at achieving a positive result in the communication process, at harmonious interpersonal interaction in combination with linguistic strategies, verbal means [2; 3:53; 5:139; 8:413; 17: 382-383].

Results and Discussion

According to M.Yu. Ryabova, elements of speech etiquette are present in the daily practice of any native speaker, i.e. "The specifics of speech etiquette lies in the fact that it characterizes both everyday language practice and the language norm", while the implementation of the rules of speech etiquette is determined both by the very situation of speech communication and its parameters, including the social status and relations between its participants [6 : 133].

The implementation of speech etiquette, which manifests itself in such speech strategies as reducing the categoricalness of statements, hyperbolic expression, intensifying a positive assessment, is achieved in the process of communication through the use of discursive markers and discursive elements (I mean, I think, you know, and, well, sort of, just , really, simply, absolutely). Such linguistic means, according to scientists, are more frequent in female speech and are used to share personal experience, knowledge, opinions, express consent, attention, invitation to the development of a discursive event [11; 14; 16; 23].

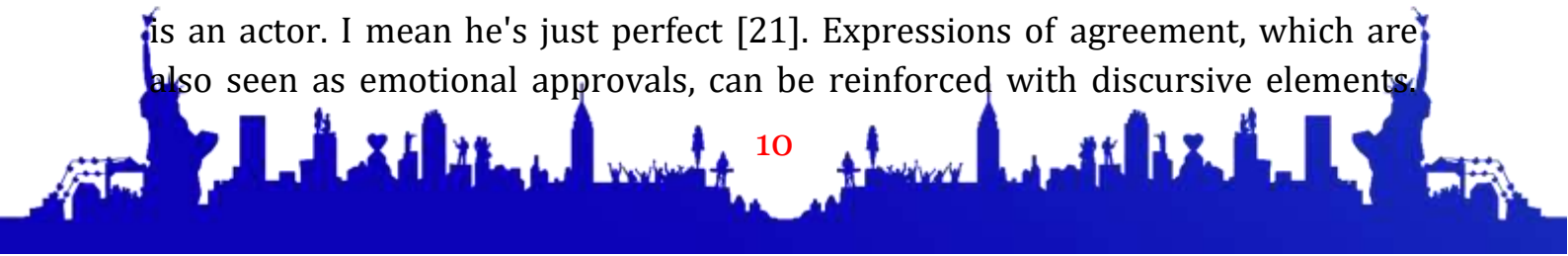




According to the unanimous opinion of researchers, such discursive elements as really, exactly, absolutely, just, simply, quite, performing an interpersonal function, mark the relationship, opinions, emotions of the speakers, serve as keys to the interpretation of the text, contributing to the implementation of rapprochement or distancing between the interlocutors [9; 13].

We emphasize that the use of these linguistic means in male and female speech behavior depends on the functioning of one or another element in the discourse as a means of underestimating, softening or strengthening the categoricalness of statements. Obviously, the more frequent use of discursive elements as markers of etiquette communication in women's speech behavior is confirmed by such basic characteristics of women's language as the desire for cooperation, support, mutual understanding, and interest in interpersonal communication. Let us illustrate the use of discursive elements in male and female speech of the English-language interview discourse, where these language means, pointing to the interaction, cooperation of the speakers, contribute to the observance of polite communication.

The use of the discursive element just when softening the categorical nature of interrogative statements is typical for the male speech of the interview discourse. (1) Peter Anthony Holder: As I mentioned earlier, I've always noticed your sense of fun in all the characters you've played and I was just wondering if you have any desire to do just a bang out comedy? [20] Example (2) shows the strengthening of the expression of gratitude, which refers to the stable formulas of speech etiquette, using the discursive element really, which is typical for male speech in the English-language interview discourse. (2) Larry King: Well said. Thank you both very much, John Prendergast, George Clooney. We really appreciate it. We hope every little bit helps. Thank you guys [19]. For female speech in the English discourse of the interview, the use of discursive elements is more typical with the intensification of expressions of praise, approval, consent, a positive attitude towards the interlocutor, the described situation. In such speech formulas of etiquette communication, a characteristic feature of female speech is the use of the discursive element just. The following example shows the use of the discursive just element in the amplification function when expressing praise, emphasizing the positive evaluation of the work of a famous actor. (3) J.K. Rowling: Dan is great. ... Finding Harry was very hard. ... And then the producers and director told us one night and they've found one. And Danny is an actor. I mean he's just perfect [21]. Expressions of agreement, which are also seen as emotional approvals, can be reinforced with discursive elements.





Thus, the use of the discursive element exactly in speech situations of approval of the opinions of communication partners is typical for female speech of the interview discourse. (4) O. Winfrey: Did you ever imagine your life being the way it is now? J.K. Rowling: No. never. ... I had no one near me professionally or personally who could in any way help me when I had questions like “what do you do when the press is searching your bins?” ... O. Winfrey: But that doesn't happen to most writers, you know? J.K. Rowling: Exactly. So it took everyone around me totally by surprise [22].

Conclusion

To sum up, an analysis of the use of discursive elements in male and female speech in the interview discourse showed that both male and female models of speech behavior are characterized by the use of discursive elements as markers of etiquette communication. At the same time, these linguistic means are a characteristic feature of female speech. In situations of softening the categoricalness of statements in interrogative constructions, when expressing advice, recommendations, suggestions, discursive elements contribute to maintaining distance, restraint between interlocutors. In situations of strengthening positive emotions when expressing approval, consent, praise, gratitude, discursive elements mark the manifestation of interest, goodwill, cooperation, serve to create a friendly atmosphere and maintain verbal interaction.

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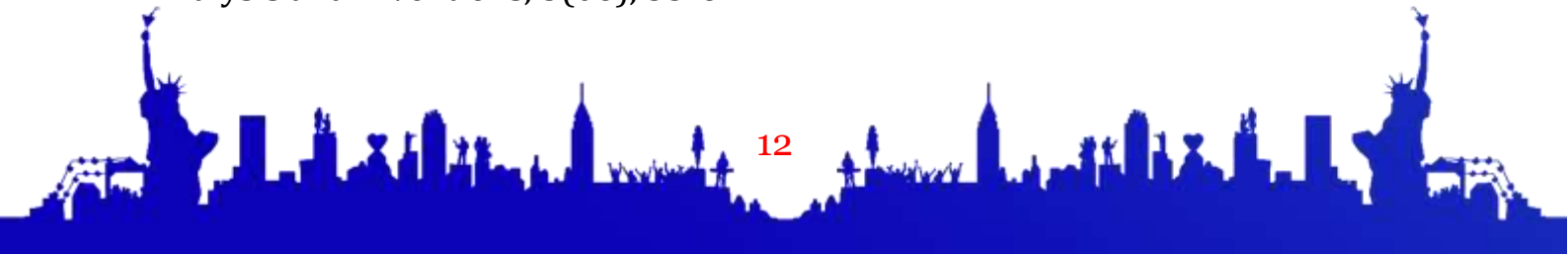
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TO INTRODUCE A STATE OF EMERGENCY LEGAL BASIS

Shohabbos Anvarovich Toshev

Senior lawyer of the Department of legal support of the organizational
Department of the Ministry of internal affairs of the Republic of Uzbekistan:

<https://doi.org/10.5281/zenodo.7018378>

Abstract: this article covers the concept of a state of emergency, when and in what case a state of emergency is declared, the types of state of emergency, the grounds for the introduction of a state of emergency, the obligations of citizens in an emergency, the types of liability for violation of the state of emergency.

Key words: referendum, Constitution, state of emergency, constitutional order, weapons, ammunition, explosives, special means, toxic substances, curfew.

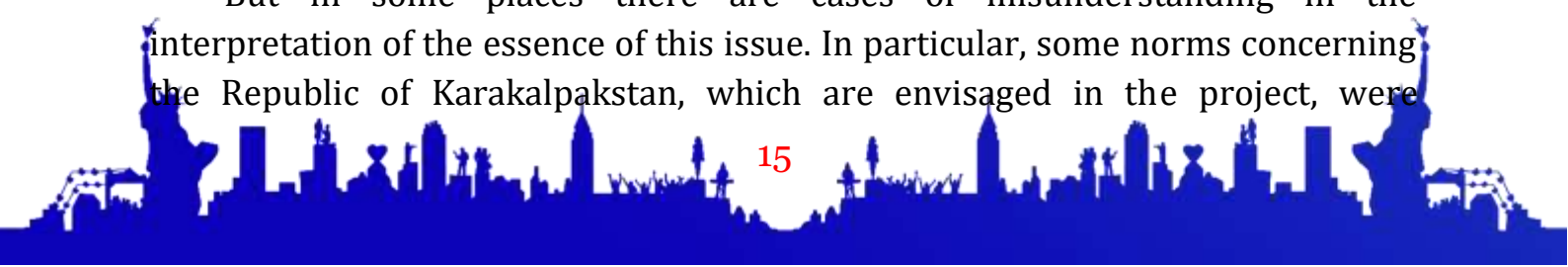
It is known that these days an important political process in our country continues to conduct a nationwide discussion on amendments and additions to the Constitution of the Republic of Uzbekistan.

Of course, the constitutional reforms of our motherland today and it is a matter of extraordinary importance for the future life. Our multinational people offer many of its own in discussions and comments. Total from citizens to date 48,492 offers were received.

Comprehensive work is being carried out to build a new Uzbekistan. Over the past 6 years, our entire society has reawakened people are striving to think, work and live in a new way. It was in these democratic renewal processes that the commission for the improvement of constancy was established, as the need arose to update and improve our general constitution in accordance with the requirements of today's life.

So far, a total of 48,492 proposals have been received from citizens to amend the Constitution. It should be noted separately that the draft constitutional law "on amendments and additions to the Constitution of the Republic of Uzbekistan" is subject to a general discussion. After that, it is brought to perfection by the legislative chamber on the basis of the opinions and comments expressed by citizens. Then this project will be put into the referendum of the Republic of Uzbekistan and our citizens will express their will on this issue by voting freely. Only then will the amendments and additions introduced into the Constitution of the Republic of Uzbekistan be of legal nature."

But in some places there are cases of misunderstanding in the interpretation of the essence of this issue. In particular, some norms concerning the Republic of Karakalpakstan, which are envisaged in the project, were





protested by a group of persons. As a result of this, on July 1 of this year, demonstrations were organized on the central streets of the city of Nukus.

A group of persons, on July 1, 2022, in Nukus city, disguised fake slogans on himself, to the confidence of citizens entering, distracting their opinion, without submitting to the legal requirements of representatives of the authorities, he caused riots, tried to seize the premises of local government bodies.

They continued to commit acts of vandalism on July 2, 2022 on the main streets in the administrative center of the Republic, without listening to the demands to stop actions aimed at violating public order.

In addition, some of the people who participated in the riots tried to provoke clashes with law enforcement officers, violently invade protected areas, throwing stones and various objects at the buildings.

During the walk through the city, they caused significant damage to infrastructure facilities. They broke the windows of buildings and made fires. Several groups attempted to take over the buildings of the Nukus City Main Department of internal affairs and the National Guard Department in order to capture the weapons.

These people took advantage of the relative advantage in terms of number, attacking law enforcement officers, beating them shamelessly and inflicting severe bodily injuries.

In this regard, by the decree of the head of State on July 02, 2022 of the Constitution of the Republic of Uzbekistan Paragraph 19 of Article 93 and "Emergency" of the Republic of Uzbekistan to articles 5-7 of the constitutional law "on status" in accordance with the order of the president of the Republic of Karakalpakstan on July 3, 2022 from 00:01 to 00: 00 on August 2, 2022 during the period, a curfew was introduced from 21:00 to 07:00 during the period of the state of emergency and state of emergency.

So when and in what situation is a state of emergency declared?

In the constitutional law of the Republic of Uzbekistan "on state of emergency", the concept of state of emergency is as follows the tariff is granted, that is, the right of citizens of the Republic of Uzbekistan, foreign citizens and stateless persons state administration bodies, local government bodies, self-government bodies of citizens, NGOs and other organizations, regardless of the organizational and legal and ownership form, which allow to establish certain restrictions provided for by this constitutional law in relation to the freedoms and rights of legal entities, as well as the rights of legal entities, and impose





additional obligations on them, which are, a separate legal regime of the activities of their officials.

Curfew - daily without special issued permits and there is a ban on staying outside the streets and other public places or accommodation without identity documents time. Goals for the introduction of an emergency state its introduction it consists in eliminating the circumstances that served as the basis for ensuring the safety of citizens of the Republic of Uzbekistan and the protection of the constitutional system and territorial integrity of the Republic of Uzbekistan.

The state of emergency is introduced in exceptional cases in the presence of situations that directly threaten the Life, Health and safety of citizens of the Republic of Uzbekistan, the constitutional system and (or) territorial integrity of the Republic of Uzbekistan, and cannot be eliminated without the use of emergency measures. The sentence for such cases includes:

Real external danger, attempts to forcibly change the constitutional system and (or) territorial integrity of the Republic of Uzbekistan, mass riots, terrorist acts, as well as acts of violence, which occur simultaneously with acts of violence, directly threatening the Life, Health and safety of citizens, the daily activities of state bodies, other organizations blocking extremely important and categorized objects or certain places or occupation, preparation (organization) of illegal armed structures and their activities, interethnic, inter-confessional and border disputes;

large accidents, natural disasters, epidemics, as well as other natural and man-made emergencies, Emergency environmental situations that require the implementation of comprehensive emergency rescue work and other non-delayed work.

The state of emergency is introduced by the decree of the president of the Republic of Uzbekistan on the entire territory or in some places of the Republic of Uzbekistan and is immediately published in the media.

According to Article 13 of the law, real external danger, attempts to forcibly change the constitutional system and (or) territorial integrity of the Republic of Uzbekistan, mass riots, terrorist acts, as well as acts of violence that occur at the same time, directly threatening the Life, Health and safety of citizens, the daily activities of state bodies, other organizations, blocking or occupation of extremely important and, in the event of inter-confessional and border disputes, the following emergency measures and temporary restrictions may apply:

introduction of curfew;





implementation of territorial defense measures;

restriction of such activities with the indication of the conditions and procedure for limiting the activities of the media, as well as the temporary seizure or correspondence of a printed product, radio-emitting, sound amplifying media, copy reproduction techniques, the establishment of a separate procedure for conducting journalists ' accreditation;

suspension of activities of non-profit organizations that are hindering the elimination of cases that served as the basis for the introduction of a state of emergency;

Conducting personal examination of citizens of the Republic of Uzbekistan, foreign citizens, stateless persons, examination of documents confirming their identity, inspection of items, housing and vehicles;

the Prohibition of the realization of weapons, its ammunition, explosives, special means, toxic substances, the establishment of a special mode of circulation of drugs and preparations, ethyl alcohol, alcohol products, which contain narcotic drugs and their analogues, psychotropic and potent substances. In exceptional cases, the temporary seizure of weapons and ammunition from citizens, weapons and its ammunition from organizations, special means and toxic substances, as well as combat and training-combat military equipment, explosives and radioactive substances;

expulsion of persons who violate the state of emergency and do not live in the territory in which the state of emergency was introduced in the prescribed manner at their own expense outside the territory, and in the absence of funds in them, the replacement of expenses at the expense of the state budget of the Republic of Uzbekistan with subsequent collection

To ensure the state of emergency, the forces and means of the Ministry of internal affairs of the Republic of Uzbekistan, the National Guard, the State Security Service and the Ministry of emergency situations, as well as other state bodies and organizations of the Republic of Uzbekistan that are part of the State System of emergency prevention and action are used.

In relation to persons who violate the rules of the curfew introduced along with the state of emergency, the Republic of Uzbekistan is subject to liability in accordance with the code of administrative responsibility.

According to Article 28 of the law, persons who violate the rules of the curfew are held until the end of the curfew, while persons who do not have identity documents (hiding information about their identity) with them can be





held for a maximum period of twenty-four hours according to the decision of the head of the internal affairs body.

Persons held, things that are next to them and documents, as well as their vehicles, can be examined in the manner prescribed by law.





КОНЦЕПТ ЮЗАСИДАН НАЗАРИЙ ҚАРАШЛАР ТАҲЛИЛИ

Гулрух Рустамовна Бекбоева

Навоий давлат кончилиқ ва технологиялар

университети тадқиқотчиси

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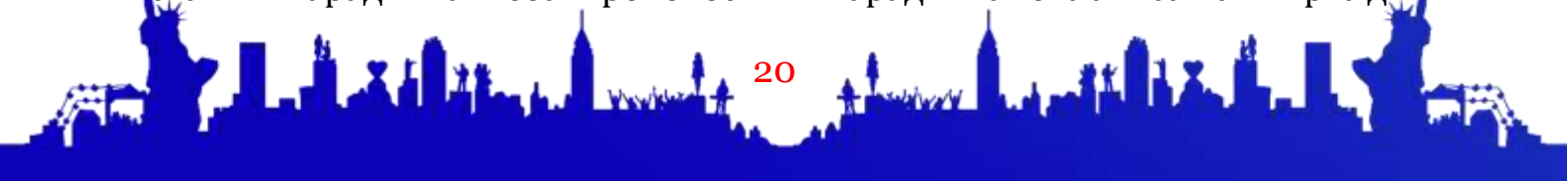
Аннотация. Кейинги йилларда тилшунослик умумий илмий парадигмаларнинг ўзгаришига мос равишда ривожланди. Тилшуносликнинг турли соҳаларида илмий билиш асосий белгига айланди. Фонология, луғат, грамматиканинг элементар қирралари ўрганилмоқда, тилшунослик ўта ҳажмли ва синтез қилинган объектларга айланмоқда. Маълумки, тилшунослик алоҳида лексемаларни ўрганишдан бошланди, сўнгра тилнинг лексико-стилистик қатламларини ўрганишга, лексико-семантик майдонларни ва лексико-тематик гуруҳларни ўрганишга ва ниҳоят, ушбу таркибдаги энг кенг тушунча бўлган концептни ўрганишга ўтди. Концепт маданиятшунослик, адабиётшунослик, психология, социология, фалсафа ва тилшунослик сингари фанлар томонидан тадқиқ этиб келинмоқда.

Калит сўзлар: Этнопсихология, психоллингвистика, когнитив психология, социоллингвистика, когнитив тилшунослик, этнолингвистика, тил, жамият, маданият, шахс, дунё, инсон шахсияти, онг, концепт.

Ҳар доим тил этник гуруҳнинг энг муҳим характерологик идентификацияларидан биридир. Пифагор таъбири билан айтганда, “ҳар қандай миллатнинг ахлоқини билиш учун унинг тилини ўрганиш” зарурдир. Фабиус Квинтилиан эса қуйидагиларни қайд этади: “Тилнинг маданият билан алоқаси, унинг воситаси ва ифодасидир”.

Тил–жамият–маданият–шахс–дунё сингари макролингвистик муаммолар хусусида XIX асрнинг биринчи ярми ҳамда XX аср бошларида тилшунос олимлар В.Гумболдт, Г.Штайнтал, Е.Сепир, А.Потебня, Д.Овсянико-Куликовский ўз асарларида илк бор маълумот беришган. Шунингдек, тилшунослар Ф.де Соссюр, В.А.Богородицкий, И.А.Бодуэн де Куртене, К.Бухлер, Е.Бенвенист, Е.М.Верещчагинлар ҳам мурожаат қилдилар.

Бироқ, XX асрнинг биринчи ярмида Воркачев тил ва маданият ўртасидаги муносабатлар масаласини йирик планга кўтариб, “миллати ва ўзи учун тилни ўрганиш – бу чекланган структурализм ютуқлари”, – дея қайд этади. Аммо ўтган асрнинг ўрталаридан бошлаб В.Постовалова томонидан гуманитар билимларнинг универсал илмий парадигмасидаги ўзгаришларнинг бир қисми сифатида доминант илмий, тизим-таркибий, статик парадигма теоантропокосмик парадигма билан алмаштирилди.





Тадқиқотчи дунёқарашнинг асосий хусусиятини унинг космологик йўналиши, яъни у дунёнинг глобал образи сифатида талқин этиб, бир вақтда антропоморфизм, яъни дунёни англашнинг ўзига хос усули хусусиятларини ташқил этади, – деган хулосага келади . Дунёнинг бу қиёфаси муқаррар равишда муаллифнинг дунёқараши ва дунёни англаш хусусиятларига боғлиқ. Аммо С.Г.Воркачев талқинича, инсон яна “ҳамма нарсанинг ўлчови”га айланади, тадқиқот диққат марказида табиий равишда аллақачон ўрганилган марказдан муаммоли периферияга ўтади ва илмий билим соҳалари: этнопсихология, психоллингвистика, когнитив психология, социоллингвистика, когнитив тилшунослик, этнолингвистика юзага келади” . Эмил Бенвенист томонидан режалаштирилган “тил, маданият, инсон шахсияти” учбурчагини қайта таъкидлаш натижасида лингвокултурологиядан ажралиб турадиган лингвокултурологик концептология (инсон шахсияти-онг-концепт) учун ўзига хос насл эди .

Лингвокултурологиянинг категорик аппарати асослари лингвистик шахс, концепция, дунёнинг миллий, лингвистик, концептуал манзараси каби асосий тушунчалардан иборат. Уларнинг эпистемологик шаклланиши ҳали тугалланмаган: кўплаб талқинлар, терминологик маъноларнинг семантикаси ва ҳодисаларни таҳлил қилиш бурчаклари бунинг далилидир.

Концепт тушунчаси доимий қайта талқин қилиш ва илмий қайта талқин этишга энг мойил саналади. Бундан ташқари, ушбу атама бир нечта билим соҳалари тилида фаол қўлланилади: маданиятшунослик, фалсафа, маданиятлараро алоқа, мантиқ, когнитив тилшунослик ва концептологияда. Унинг терминологик “рақобатчилари”, синонимлари ҳам бор, гарчи уларнинг барчаси синонимлар бўлиши керак бўлса-да, концепт жиҳатидан мос келмайди деган фикрларни беради: лингвокултурема (В.Воробёв), логоепистема (Е.М.Верещагин ва В.Г.Костомаров), ижтимоий-маданий стереотиплар (И.А.Стернин), ақлий вакиллик (В.В.Колесов) фалсафий ва метафорик белгилашларни келтиради .

В.А.Маслова концептнинг бир нечта таърифларини беради: концепт – бу хизмат қиладиган атама, онгимизнинг ақлий ёки ақлий ресурслари бирликларини тушунтириш ва инсоннинг билим, тажрибасини акс эттирувчи ахборот тузилмаси; концепт – бу хотиранинг операцион мазмун бирлиги, ақлий лексикон, концептуал миянинг тизими ва тили, инсон руҳиятида акс этган дунёнинг бутун сурати; концепт – бу ифода





жиҳатидан тақдим этиладиган, маданий белгиланган лексикосемантик парадигмани ташкил этувчи бир қатор лингвистик реализациялар билан, лингвистик ифодага эга бўлган жамоавий билим бирлиги ва этномаданий ўзига хосликлар мажмуидир .

Концепт баъзи идеал, мавҳум бирликлардир. У инсон фикрлаш жараёни, инсон фаолияти ва атрофдаги дунёни билиш билан боғлиқ ҳолда амалга оширилади. У олинган таркибни акс эттирадиган билим. Одамлар ўртасидаги мулоқот жараёни ва ахборот алмашинувидир .

Степановнинг сўзларига кўра, “Концепт жамоавий меросни англатади. У доимий равишда ёки жуда узоқ вақт давомида мавжуд тушунчаларни сақловчи коллектив онгдир” .

Концепт янги илмий интизом доирасида лингвокультурал ҳодиса сифатида В.Маслова, Г.Слишкин, С.Г.Воркачев, Ю.С.Степанов асарларида аниқланган. Концептни тушунишга лингвокультурал ёндашув маданиятнинг асосий бирлиги, унинг концентрати сифатида тан олинган. Лингвокультурал жиҳатдан тадқиқотчилар концепт ҳақида ўз фикрларини илгари сурдилар. Концепт тилшуносликнинг асосий категорияси бўлиб, концепт квантдир, миллий менталитет ва фаолият натижасидир.

Умуман олганда, концепт она тилида сўзлашувчилар томонидан шакллантирилади. У одамлар хотирасида сақланадиган, шаклланадиган тилнинг концептуал соҳаси. Концептни инсон онгидаги маданиятга қиёслаш мумкин, чунки маданият инсон руҳиятига таъсир қилувчи дунёдир. Бошқа жиҳатдан олиб қараганимизда эса, концепт – бу шахс, оддий одам. Бунинг боиси шундаки, инсон – маданий қадриятларнинг яратувчисидир.

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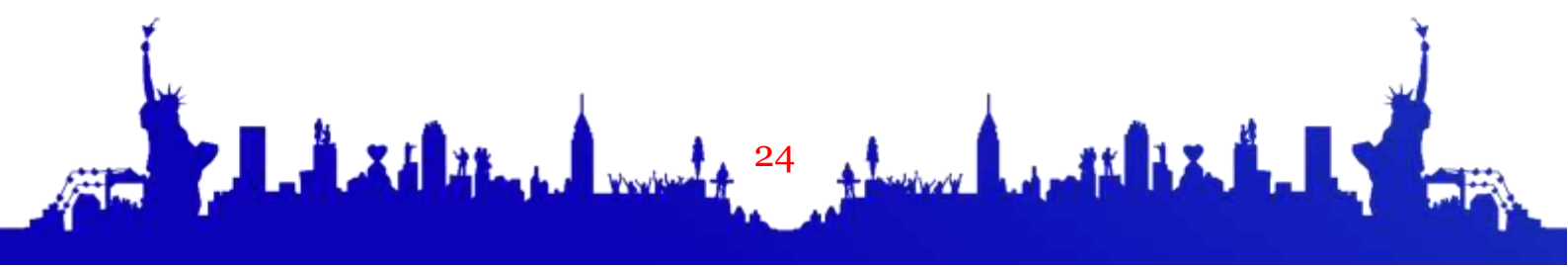


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ANATOMY OF NEUROTRANSMITTERS AND THEIR INFLUENCE ON BEHAVIOR

Avezov Olmos Ravshanovich¹

Associate Professor of

Shavkatova Shakhnoza Pulot qizi²

Student of

¹Bukhara State Pedagogical Institute

²Bukhara State University

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ANNOTATION

The article provides information about the anatomical structure, function and working mechanisms of neurotransmitters. Types of neurotransmitters, their effects on our physical and mental functioning, and the effects of other chemicals on neurotransmitters are discussed.

Key words: Neurotransmitter, neuron, axon, synapse, amino acid, endorphin, morphine, Alzheimer's, acetylcholine, dopamine, demotivation, depression.

INTRODUCTION

A neurotransmitter is a chemical substance that transmits information from one nerve cell (neuron) to another by crossing the space between cells, the synapse. Neurotransmitters are chemicals that travel from neuron to neuron and transmit impulses to muscle cells and other cells. More precisely, neurotransmitters are a means of sending signals from one part of the body to another. More than 100 neurotransmitters are known to us. Most of them are composed of amino acids and other complex compounds.

MAIN PART

The receptors and muscles have the ability to contract. If the transmission of ACh neurotransmitters is blocked, as in some types of anesthesia, the muscles cannot contract and the person can become paralyzed.

Candace Pertand Snyder (1973), who made the sensational discovery about neurotransmitters, attached a radioactive substance to morphine. This substance has been used in areas related to mood and pain. Our neurotransmitter molecules are released in response to pain and vigorous exercise. These endorphins (short for endogenous morphine) may help explain the feel-good effects of what we now call the "runner's high," the pain-relieving effects of acupuncture, and the insensitivity to pain in some severely injured people.





SOME NEUROTRANSMITTERS AND THEIR FUNCTIONS		
Neurotransmitter	Function	Examples of Malfunctions
Acetylcholine (ACh)	Enables muscle action, learning, and memory.	With Alzheimer's disease, ACh-producing neurons deteriorate.
Dopamine	Influences movement, learning, attention, and emotion.	Excess dopamine receptor activity is linked to schizophrenia. Starved of dopamine, the brain produces the tremors and decreased mobility of Parkinson's disease.
Serotonin	Affects mood, hunger, sleep, and arousal.	Undersupply linked to depression. Prozac and some other antidepressant drugs raise serotonin levels.
Norepinephrine	Helps control alertness and arousal.	Undersupply can depress mood.
GABA (gamma-aminobutyric acid)	A major inhibitory neurotransmitter.	Undersupply linked to seizures, tremors, and insomnia.
Glutamate	A major excitatory neurotransmitter; involved in memory.	Oversupply can overstimulate brain, producing migraines or seizures (which is why some people avoid MSG, monosodium glutamate, in food).

RESULTS AND DISCUSSION

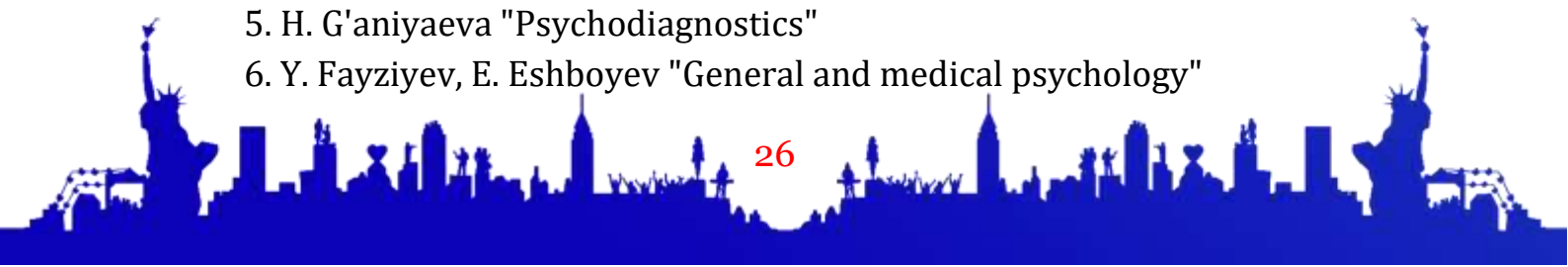
Due to the lack of the following neurotransmitters, various diseases can occur. For example, Alzheimer's disease is associated with a lack of acetylcholine in certain areas of the brain. Loss of dopamine in certain parts of the brain causes the muscle stiffness that is characteristic of Parkinson's disease. Too much glutamate can be difficult for the brain to control because it can overexcite cells. If the balance of noradrenaline is disturbed, the appearance of mood disorders, spontaneous smoking, divorce, demotivation, depression, decreased libido. In order to prevent the occurrence of these diseases or to treat the disease, it is necessary to maintain the amount of amino acids in moderation. Our daily food should be rich in amino acids that are lacking in the body.

CONCLUSION

In summary, neurotransmitters are chemical fluids in the body, and each neurotransmitter is designed to perform different functions. They provide alternation, i.e. permanence, in the body. If the amount of this chemical is not sufficient, we cannot react to stimuli, signals do not arrive in time, and responses to signals do not arrive in time. Therefore, it is necessary to keep proteins in our daily food in moderation.

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УЛУҒЛИКНИ УЛУҒЛАГАН ҚАСИДАЛАР

Гуландом Қурамбоева

Тошкент Педиатрия тиббиёт институти доценти,
филология фанлари номзоди

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Қорақалпоғистон халқ шоири, Бердақ номидаги давлат мукофоти лауреати, серқирра ижодкор Гулистон Матёқубованинг “Кўксимдаги нур” (2021) китоби шоира ижодининг янги саҳифаси бўлди. Мустақиллик ғоялари етакчи бўлган китобда ижтимоий-сиёсий, маънавий-маърифий ҳаётдаги туб бурилишлар, муваффақиятлар, аввало, Қорақалпоғистоннинг юксалиш кўрсаткичлари, янгиланишлар талант, жўшқин меҳр ва илҳом билан ёзилган. Китобнинг мундарижаси серқирра ва сермаъно: Ватан, халқ тақдири, инсон қадрлари, меҳнат ва муҳаббатни улуғлаш, меҳр-оқибат, яхшилик. Бу каби гўзал фазилатлар янги бадиий шаклларда ёритилгани тўпламнинг ўзига хос моҳиятини ташкил этади.

Шеърлар туркуми ва достонлар, бадиий публицистика, эсселар ва бошқа жанрлардаги катта-кичик асарлар шоиранинг юрак ёлқини, эзгулик нурларининг ўзгача талқинидир. Қамрови катта бу асарларни бир ғоя, бир мақсад, бир маънавий-ахлоқий манфаат бирлаштиради. Бу – жамият, халқ, миллат манфаати, улуғликни қадрлаш ва эътироф этиш, давр ҳақиқатини бор бўйича, ҳаққоний тасвирлашдир. Асарлар шу мезонларга қурилган. Ҳар бир асар замонавий, истиқлол ғояларига оҳангдош, инсон қадрини улуғлаш, юксак ахлоқни тарғиб қилиш барча асарларда бош мотив. Шеърлар ҳам, достонлар ҳам, публицистик мақолалар ва эсселар ҳам шу ғояга хизмат қилади. Китобдаги икки достон-қасида фикримизни тасдиқлаши мумкин. Бири “Эл отаси”, иккинчиси “Янгиланган қорақалпоқ диёрим”.

“Эл отаси” меҳнат қаҳрамони, “Эл-юрт хурмати” ордени соҳиби Қаллибек Камолов ҳақида. Бу инсонни нафақат Қорақалпоғистон, Ўзбекистон халқи ҳам яхши билади, ҳурмат қилади. Эл отаси мақомига эришиш камдан кам инсонга насиб этадиган бахт. Қорақалпоғистонда мана “эл отаси” бахтига муяссар шахс фақат Қ.Камолов десак, бу ҳам ҳақиқат. Достоннинг композицион қурилиши сал бошқачароқ, ноанъанавий. Муаллиф муқаддимада достон қаҳрамони шаклланган муҳит, ижтимоий шароит тўғрисида қисқа маълумот бергач, воқеалар тафсилотига ўтади ва асар қаҳрамонига “сўз беради”. “Қаллибек оғанинг айтганлари” деган сарлавҳада воқеалар қаҳрамон тилидан берилади. Халқимиз яхши билади, Қ.Камолов қарийб йигирма беш йил





Қорақалпоғистонга раҳбарлик қилган. Шу муддат ичида амалга оширилган ишлар, халқ хўжалигининг ҳамма соҳалари: таълим-тарбия, маданият ва маориф, тиббиёт, қишлоқ хўжалиги, саноатдаги юксалишлар, қурилишдаги янгиликлар, янги туманларнинг ташкил этилиши, шу инсоннинг ташкилотчилик фаолияти билан боғлиқ маълумотлар қасидада оддий баён усулида эмас, балки бадий унсурларда, ифода шаклларида намоён бўлади. Образ характерининг шаклланиб бориши ҳар хил вазиятларда кечади. Ютуқлари ҳам, қийинчиликлар ҳам, мураккаб ҳаёт ва меҳнат шароитлари қаҳрамонни чиниқтиради. Достонда қаҳрамоннинг “эл отаси” мақомига етиб ардоқланиши яхши асосланган, сунъий талқин йўқ, ҳаммаси табиий.

Қасиданинг охирларида муаллиф яна бир муҳим масалага диққат қаратади. Инсон, агар айтайлик, у масъул лавозимларда ишлаб, улуғ ишлар қилиб, ватандошлари ҳурматини қозонган бўлса, нафақага чиққач, бир вақтлар қилган ишларидан фахрланса, шу ҳаёт ичида яшаётганидан, қадрланаётганидан ғурурланса, бу ўша инсон учун катта қувонч. “Эл отаси” ана шу бахтга сазовор бўлган инсон. Қаҳрамоннинг бу кечинмалари асарда ҳам акс садо берган.

“Янгиланган қорақалпоқ диёрим” достони ҳам қасида жанрига мансуб. Қорақалпоғистоннинг мустақиллик йиллари, айниқса, кейинги тўрт-беш йилдаги ривожланиш кўрсаткичлари, барча соҳалардаги бунёдкорлик ишлари ва бу жараёнга раҳнамолик қилган, ташкилотчилик қобилияти билан эл назарига тушиб, ҳурмат қозонган инсонлар қасиданинг етакчи қаҳрамонларидир. Истиқлол йилларида Қорақалпоғистонда амалга оширилган кенг кўламли янгиланишлар, бунёдкорлик ишларининг бирор соҳаси йўқки, муаллиф эътиборидан четда қолган ёки мавзуга қўл урмаган бўлса. “Қиз кетган” каналининг “Дўстлик” канали деб номланишидан тортиб, ижод мактабларини Президент мактаблари, Олий таълим тизимидаги ислохотлар, Мўйноқ ва Бўзатовдаги буюк ишлар, Оролнинг суви тортилган жойларини кўкаламзорлаштириш билан боғлиқ саъй-ҳаракатлар натижалари, маданият ва санъатга бўлаётган эътибор, халқни рози қилиш йўлида амалга оширилаётган бошқада тадбирлар шоирага илҳом берган, шу юртнинг бир садоқатли фарзанди тимсолида жараёнларни жўшқин меҳр билан қуйлагани асарнинг ютуғидир.

Қорақалпоғистонда сўнгги йилларда эришилган муваффақиятлар, янгиланишлар республикага узоқ йиллар раҳбарлик қилган М.Ерниёзов



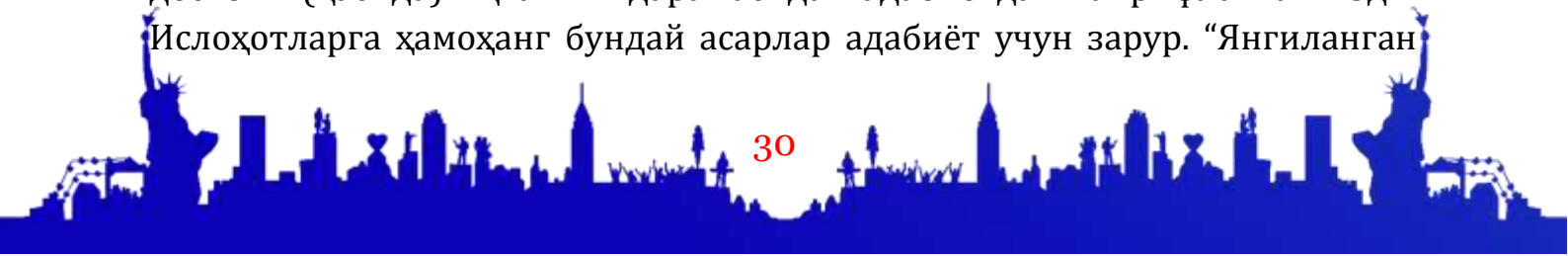


номи, ташкилотчилик қобилиятига дахлдор. Қорақалпоқ халқи буни яхши билади ва қадрлайди. Бу инсоннинг фидоий меҳнатлари, Қорақалпоғистонни ҳар томонлама юксалтириш учун қилган интилишлари қасидада аниқ мисолларда очиб берилган. Раҳбар шахсга хос, юртига, халқига чексиз меҳр, садоқат билан хизмат қилиш фазилати бу инсонда жамулжам бўлганлиги ҳақидаги фикр қасиданинг мазмун-моҳиятига сингган.

Қасида ғоясини нурлантириб, аҳамиятини ошириб турадиган яна бир ҳолат бор. Бу – Президентимиз Ш.Мирзиёевнинг Қорақалпоғистонга, қорақалпоқ халқига эътибори, ҳурмати ва меҳрининг алоҳидалиги билан боғлиқ масала. Асарга муҳтарам Президентнинг “Мен нафақат ўзбек халқининг, балки қорақалпоқ халқининг ҳам фарзандиман” деган эътирофининг эпиграф сифатида келтирилгани “узукка қош қўйгандек” ярашиб турибди. Дарҳақиқат, мустақиллик йилларида, хусусан, сўнгги тўрт-беш йилда Қорақалпоғистонда амалга оширилган туб ислохотлар, ўзгаришлар, янгиланишлар бевосита муҳтарам Президентимиз ташаббуслари, таклифлари ва кўрсатмалари асосида бажарилганини халқимиз яхши билади. Мўйноқнинг янгиланиши, Бўзатовнинг қайта тикланиши дейсизми, Орол муаммолари бўладими, умуман, халқ хўжалигининг ҳамма соҳаларидаги юксалишлар М.Ерниёзовнинг таклифи, ташаббуси ва Президентнинг топшириғи, қўллаб-қувватлаши туфайли амалиётга татбиқ этилгани икки донишманд раҳбарнинг ҳамкорлиги, ҳамнафаслиги натижасидир.

Асарда бу фактларга сўз қудрати-ла поэтик ранг берилган, жилолантирилган, том маънодаги бадий асар шаклига келтирилган. Натижада ўқувчи фактларни оддий маълумотлар тарзида эмас, бадий-эстетик маънога йўғрилган лирик қаҳрамоннинг кечинмалари деб қабул қилади. Тафаккур салоҳияти билан уйғунлиги қасиданинг бадий фазилати. Қасида илҳомбахш ғоя билан яқунланади. Муаллифнинг она Ватанга меҳри, дил рози, қувончи, истиқболдан мамнунлик кайфияти, ватанпарварликка садоқат ғоялари янада таъсирли чиққан.

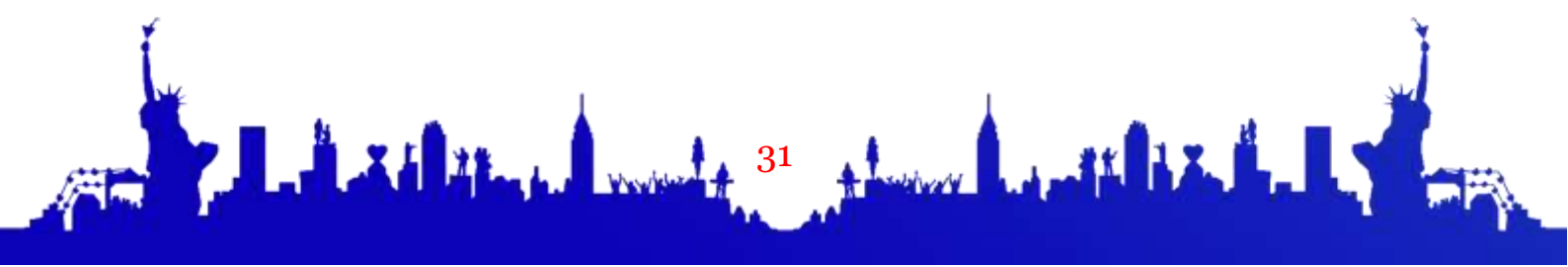
Қорақалпоғистоннинг ютуқлари, юксалиши, янгиланиш жараёнлари тўғрисида кўплаб асарлар ёзилган. Лекин ҳеч бирида ўлканинг истиқлол йилларидаги ривожланиш кўрсаткичлари, Қорақалпоғистонни ҳозирги даражага чиқишида жонбозлик кўрсатган фидоий раҳбарлар фаолияти дoston (қасида) қилиш даражасида адабиётда таърифланган эди. Ислохотларга ҳамоҳанг бундай асарлар адабиёт учун зарур. “Янгиланган





қорақалпоқ диёри” қисқа муддатларда Қорақалпоғистоннинг ривожлангани, тарих саҳифаларига битилса арзигулик буюк ишларнинг амалга оширилгани ҳақидаги бу асар қорақалпоқ ҳаётининг бадиий кўзгуси, солномаси десак хато эмас.

Хулоса шуки, улуғликни улуғлаган ҳар икки дoston-қасида ҳам адабиётда замон қаҳрамонлари образини яратишдаги жиддий ютуқ. Янгиланаётган Қорақалпоғистоннинг бетакрор турмуш тарзини, ривожланиш босқичларини реал ҳаёт материалида бадиий ёритган яхши асар. Она Ватан ва унинг баҳодир ўғлонлари мадҳ этилган, ғоявий-поэтик салоҳияти пухта, тарбиявий аҳамияти ҳам ибратли, замон руҳи уфуриб турган ижод намунаси ҳамдир.





IN THE COURSE OF GLOBALIZATION IN THE RANKS OF THE INTERNET INFORMATION SPACE

Dadakhan Raimbayev

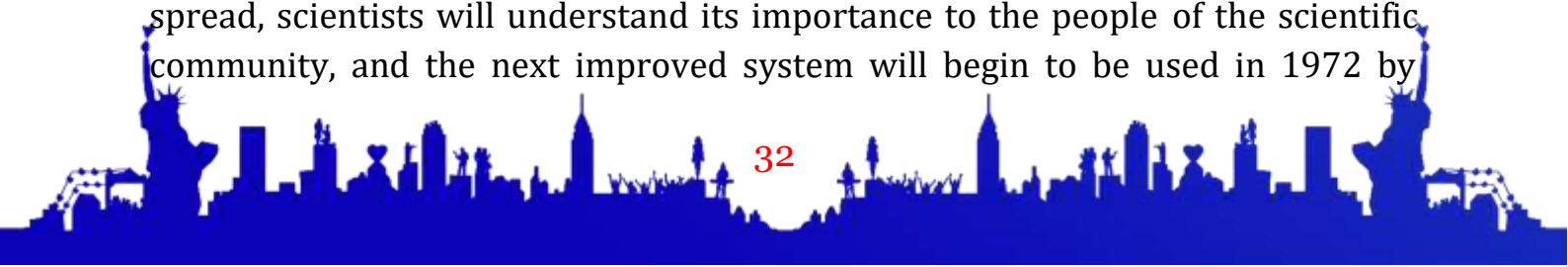
Karakalpak State University Karakalpak
philology and journalism student of the
4th stage of the faculty

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Annotation: this article is written about the development of the internet and the history of its appearance on the sites in it.

Keywords: Arpanet, internet, web, Application, milnet, login;

The internet has become an integral part of the lives of millions of people in a short period of time, which quickly leads to the merger of civilizations that have brought the development of mankind to a new level, which has led to the exchange of information from different parts of the world. Looking at the history of the Internet, it can be seen that several political factors contributed to its emergence, since at a time when the breath of cold snap was shaking the world, the US government dreamed of creating a network that would contain all the documents that would survive even in a nuclear war, so the US Department of defense turned to RAND Corporation. Expert Paul Baran offers to transmit digital data using packets due to the fact that the technical transmission of a long-distance anal signal is difficult. The Pentagon is pleased with the ideas that they will turn to the AT&T telephone company to create such a network, but the company gives the conclusion that the scientist's ideas are nothing more than fiction. On October 4, 1957, the former Union for the first time in the universe flies the sun satellite of the Earth. It is reported that the US government, having concluded that the funds allocated by the Pentagon for scientific research are being spent in vain, will set up an ARPA agency for research on promising projects under the Ministry of defense, which will be tasked with creating a network that has no equal in the world. In 1967, Barley director Larry Roberts attended a scientific conference on the prospect of computer networks in England, where Wesley Clark's report on the network, consisting of patent communications carried out at the National Physics Laboratory of great Biritania, draws his attention. In December 1967, a network consisting of four nodes will be created, which will unite 4 US universities and will be called arpanet. In 1983, its military branches separated from ARPANET and operated as a separate MILNET network. As the new technology message begins to spread, scientists will understand its importance to the people of the scientific community, and the next improved system will begin to be used in 1972 by





connecting scientific centers at its university. On December 29, 1969, at 21.00 in the evening, the first communication signal is felt between the University of California in Los Angeles and the Sendafort Research Institute, located 640 kilometers from each other. Operator Charlie Cline tries to connect from Los Angeles on a computer located in Sendaphore. The output of each transmitted character on the monitor is confirmed by his colleague Duval over the phone. For the first time only three characters are transmitted these were just the first link of the LOGIN command word. After that, communication is interrupted but at 20.00, communication is restored in them and the word is transmitted completely, this date is officially recorded as the birth of the internet. In the Arpanet network, data transmission began to be carried out successfully. In 1971, a program for sending e-mail will be developed and will become popular in birzum. It is worth saying that research on the establishment of a global network was carried out not only in America, but also in other countries of the world. In 1965, David, a scientist at the National Laboratory of physics of England, offers to expand the experimental network, but his opinion is not supported by other scientists. After Wesley Clark's report in 1967, continuing his research, in 1973 he manages to create a communication packet network for a multidisciplinary laboratory. In 1976, the network had combined 12 computers and 75 terminal device bars. In 1970, networks in the UK and Narvegia would be added to the network via a trans-telephone cable, and from that year the network would gain international status. As a result of ARPA's support in 1903, the rules for the transmission of information between computer networks i.e. protocols are developed but the networks seen in other standards interfere with the successful operation of these protocols. This problem is solved by adopting a common protocol, and as a result of the transition to this protacol in all states on January 12, 1983, arpanet began to be called the internet. Since the first years of independence Uzbekistan has taken a worthy place in the world community, the mass introduction of modern information technologies in computer technology and their use in all spheres of public life create favorable conditions for the development of communication and Information Communication in order to expand the enjoyment of world information resources by more fully satisfying the needs of defines as one.

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THE NEED TO RESEARCH AND USE ADVANCED PEDAGOGICAL TECHNOLOGIES IN THE DEVELOPMENT OF STUDENTS' CREATIVE RESEARCH

Sindarova Sh. M.¹

¹Assistant Engineering and Computer Graphics
Tashkent Institute of Textile and Light Industry

Rikhsibaev U. T.²

²Associate professor Engineering and Computer Graphics
Tashkent Institute of Textile and Light Industry

Khalilova H. E.³

³Senior lecturer Engineering and Computer Graphics
Tashkent Institute of Textile and Light Industry
<https://doi.org/10.5281/zenodo.7034684>

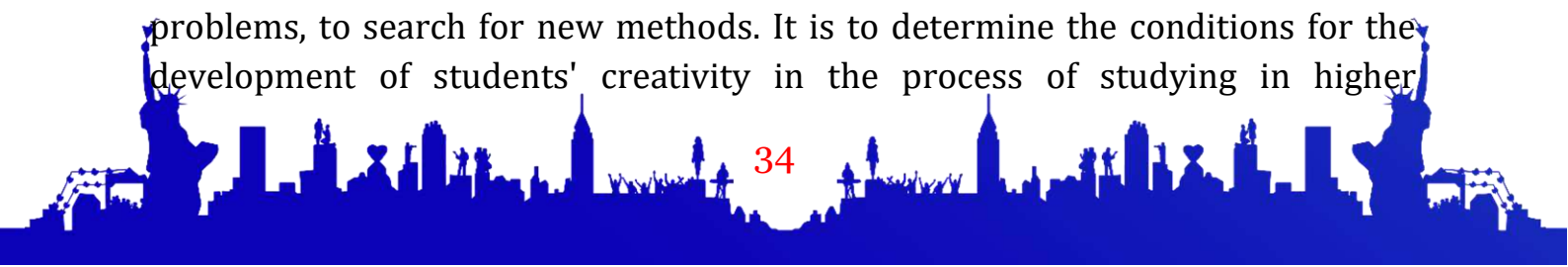
Keywords: Creativity, thinking, fluency, flexibility, accuracy, originality, cooperation, tasks, playful technologies.

Abstract: This article provides methodological guidelines for the development of students' creative research. Effective methods of increasing students' knowledge level are pedagogically highlighted.

Creativity is considered a very important methodical potential for students of a higher educational institution. Increasing the value of modern education and science in the society is related to the expansion of the requirements for the level and quality of knowledge. Further development of students' creativity is one of the main tasks that we have set before us. The development of knowledge, worldview and interests is based on the production of innovative new ideas. It consists in the development of human abilities and skills to produce any new innovative ideas. Therefore, it is necessary and necessary to develop creativity in students, to form creativity.

Increasing interest in the development of creativity in various fields leads to new innovations. Thus, one of the qualities that make up the CREATIVITY model of Human Development is critical thinking, cooperation, creativity, creativity and communication. International research organizations define creativity as one of the basic skills needed in modern life and emphasize the need to develop creativity as part of the integration of academic education and professional training.

The nature of the demand for strong professionals shows the relevance of such qualities as creativity: the ability to work in a team and independently, to solve problems, to search for new methods. It is to determine the conditions for the development of students' creativity in the process of studying in higher



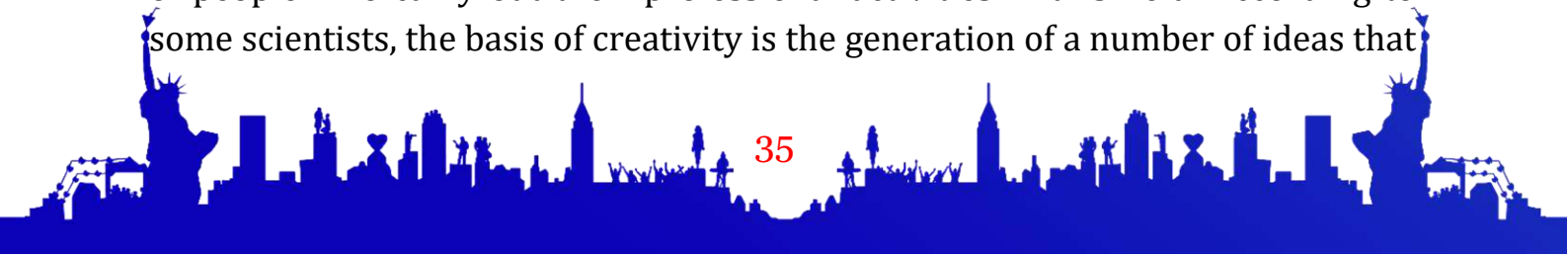


educational institutions. Qualitative research is informed by in-depth expert interviews with experts in higher education. The analysis of recent studies on the topics of youth employment, the problem of inconsistency between the higher education system and the labor market shows that creativity in the context of higher education is considered as an integral feature, its main features are specific g represents the ability to generate ideas, result orientation, solving practical problems, originality and speed of thinking, openness to innovation and creativity.

The frequency of using the term "creativity" in the development plans of Uzbekistan's economy is increasing, the importance and necessity of changes in the national education system to ensure the effective development of creativity among students in educational institutions is emphasized. The concept of creativity At the current stage of the development of society, one of the main tasks of education is the development of human capital as the most important resource of the modern economy.

Despite the fact that one of the main factors of the growth of human capital is its creative element, science has not yet formed a consensus on the conceptualization of creativity. Creativity: is defined as a multi-purpose cognitive creative ability and its four main characteristics should be highlighted: fluency, flexibility, precision and originality. Creativity that sustains and develops ideas in students is sensitivity to problems, lack of knowledge, harmony, search for answers and solutions, putting forward hypotheses, testing them and increasing the quality of the process of forming results. We consider creativity in relation to the needs of the individual: the higher the level of demand, the higher the creativity. Creativity is inherent in every person, but many people lose it under the influence of various factors. The connection between creativity and social values is one of the most important and leading needs and values of a person - self-development, self-expression, and the desire to develop one's potential. Openness to innovation, the ability of non-standard solutions, security of the external environment, freedom of self-expression are conditions for the realization of potential, self-development. Many scientists have studied the creative qualities and creativity of a person and are still studying it.

A creative act consists of three systems: an individual, a field of activity (general practices, values, knowledge) and a community of experts, that is, a community of people who carry out their professional activities in this field. According to some scientists, the basis of creativity is the generation of a number of ideas that





can be options for solving a particular problem. Based on experience and knowledge, a person chooses the most appropriate solutions, and it eventually becomes the final product. It also states that creative ideas cannot be defined using certain measurement parameters without identifying non-creative ideas. Of course, to carry out such a process, not only experience and knowledge are needed, but also a number of certain skills and qualities.

In addition, there are approaches to the definition of creativity, which include a set of previously formulated definitions: 1. "Creativity is the combination of perceptions realized in a new way, the ability to find new connections, the emergence of new concepts;

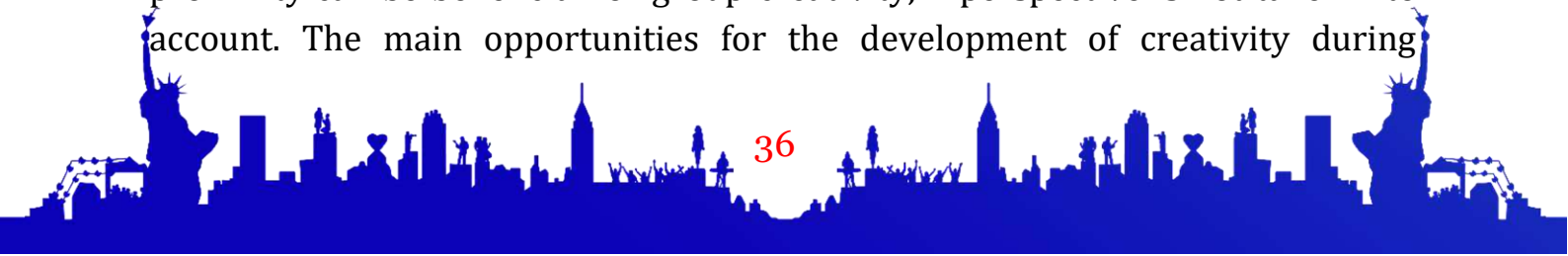
- relationships;
- tendency to create and recognize innovations;
- the activity of the mind that leads to new concepts;
- experience of changes in a new organization;
- imagining new categories of meanings.

Creativity and education can be viewed from different perspectives. One of the approaches to the study of creativity in education is related to the introduction of the competence approach, which is based on the consideration of creativity as the interdependence of several components: methodological, procedural, personal and panoramic.

According to this approach, creative competence is the ability to work effectively and inventively in conditions of uncertainty to solve specific practical problems, knowledge and experience, readiness to flexibly use the acquired knowledge, self-discipline and self-discipline. improvement.

Depending on the topic, creativity in education is studied in four aspects: personal (students and students' creativity), group (communication, cooperation), procedural, institutional (factors and environmental conditions). All studies that have any influence on the development of creativity-related abilities and personality traits have noted the importance of culture, environment, and other conditions. Promoting creative economy, human capital and innovation requires cooperation between higher education, economy and cultural policy. Skills, knowledge, attitudes do not develop in a vacuum, they always differ depending on the field, so the question of developing creativity is primarily a question of the fields of application.

Research on the issue of creativity in collaborative teams has shown that proximity can be beneficial for group creativity, if perspective is not taken into account. The main opportunities for the development of creativity during



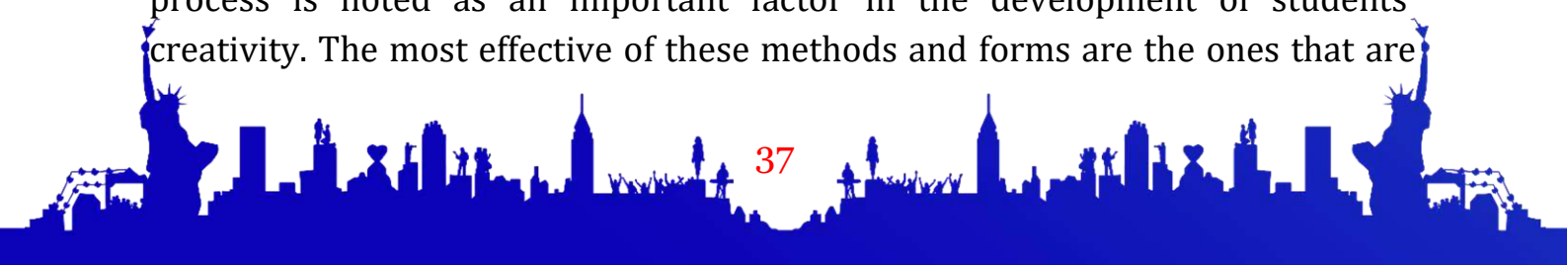


studies at the university are educational activities and a favorable climate, curriculum. A number of researchers are concerned that despite the fact that higher education institutions play an important role in the changing world, modern educational programs do not meet the needs of the economy and the labor market, and the development of creativity is not sufficiently evaluated and studied.

Development of student creativity in higher educational institutions: Creativity of students is related to creativity of teachers. Teachers' level of creativity is related to how they rate students' creativity-related traits, i.e., the more creative a teacher is, the more students' creativity-related traits, leadership, and perception are related to creativity. While students define creativity mainly as a characteristic of a person or process, professors understand student creativity in terms of self-reflection, independent decision-making, curiosity and motivation, and the production and development of new things. We must recognize the great influence of tutors and socio-cultural systems in the development of students' creative culture. But in pedagogy, the importance of students' creativity is underestimated, since it is a central issue. At the same time, students play one of the most important roles in the educational process, so this issue should not be neglected in the process of improving student qualifications. Training affects idea generation, creativity of solutions and leadership effectiveness. The introduction of educational methods into education opens up the creative possibilities of students. In the modern world, there is a need for professionals who are able to create new ideas, who are in high demand, who form innovative models and propose and implement competitive projects. The success of such activities is mainly ensured by the high creative ability of specialists.

The great creative potential of young people, developed and implemented in a perfect and methodical manner, will bring great benefits to the state. However, it is a difficult problem to determine the vector of development of student creativity in universities in time and skillfully form it. The unstable position of the educational system is due to the lack of a systematic, conceptual approach to education. Research on ways to develop students of higher education also shows that the expert opinions of university management and business leaders state that modern higher education should be both fundamental and practical.

The use of interactive, playful, educational methods and forms in the educational process is noted as an important factor in the development of students' creativity. The most effective of these methods and forms are the ones that are



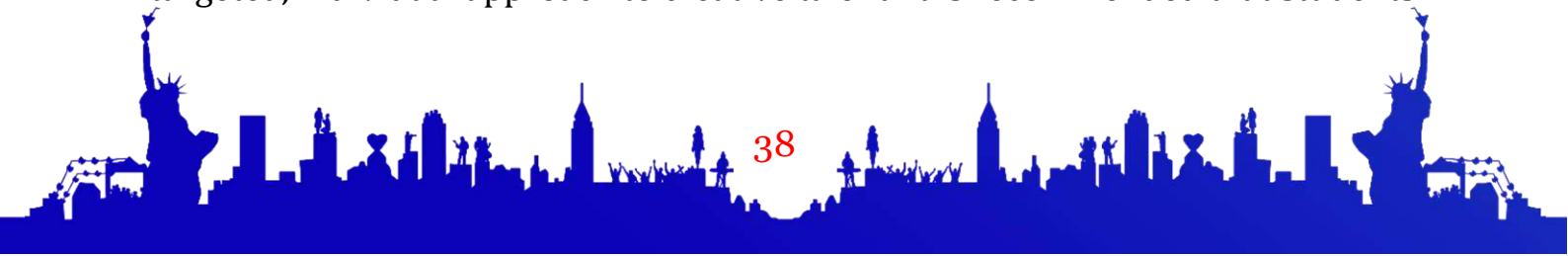


so close to practical activities: practical tasks, cases, scientific games, conferences, strategic sessions, conversations, seminars. In addition, it can be performed as a course work, diploma, and qualification work, and they can be directed not only to students, but also to specialists in a certain field. One of the highest potentials for the development of creativity is the scientific and research work of students, in which a practice-oriented, problem-oriented approach is fully implemented. The activity of the institute is one of the main elements in the mechanism of production of research activities of universities and gathering of new knowledge. Experts say that the study of humanities develops the ability to think creatively, increases the cultural level, and forms the human value-semantic basis. An important factor in the development of creativity is interpersonal relationships, especially with teachers. The effectiveness of the educational process depends on the teacher's interest in professional activity. The ability to think, analyze, synthesize information and make decisions, it is difficult to implement changes at the global, systemic level in educational processes. Another important factor in the development of creativity among higher education professionals is the creation of conditions to contribute to the stimulation of creative processes in the university environment. The process of creativity development must include the social strengthening of creativity, communication with people who have creative abilities, and the creation of conditions in which there is a positive example of creative behavior.

He prefers to organize events that provide interpersonal and intergroup communication: excursions to enterprises, organizations, meetings with experts, conferences, roundtables, etc.

Analyzing the thoughts of students, creative research allows to determine whether the educational environment, as a rule, is aimed at developing the qualities characteristic of creativity, including openness to new impressions, the ability to abandon stereotypical ways of solving problems. Highlighting the most developed quality among students - the creation of many original ideas and strategies that are clear, general, radically different from stereotypes, focusing on expanding opportunities.

This means that the creative potential inherent in young people requires that it be opened by specialists and teachers. This fact is connected with the need for a more thorough and demanding selection of teachers, as well as training in the technology of working with students aimed at identifying creative talent and a targeted, individual approach to creative talent. It is recommended that students





use more practical activities with game elements that develop their creative abilities.

The modern era of society's development is characterized by changes affecting all spheres of human activity. In such conditions, society's need for an independent creative person is increasing. In this regard, socio-economic reforms are placing high demands on higher education in terms of practical preparation of higher education students to continue their studies and engage in work.

For example: science, technology and production. Orientation to the development of the personality of modern higher education students, his knowledge and creative abilities shows his creative development in the overall educational process. It is necessary to educate students not in the old way, but using new technologies, using a new level of training of teachers. but also update without hesitation. He only occasionally refers to modern concepts of developmental education and, in particular, competence-oriented technology.

The innovative development of talent is the provision of high-quality general education that meets the modern requirements of society and every citizen. This is to create conditions for the development of creative and scientific potential of students, identify creative and talented students, accompany them and support them.

CONCLUSION : Nowadays, the urgent problem of university education is to improve the professional training of graduates of pedagogical universities. First of all, its high social significance and uniqueness - the personal identity of the student is connected with the formed personality.

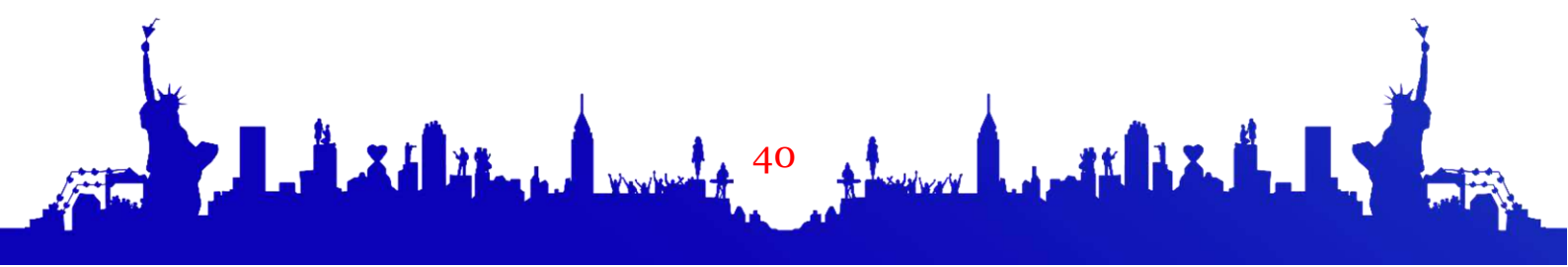
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CONTENT AND LANGUAGE INTEGRATED LEARNING IN BILINGUAL

Madaminova Moxlaroyim Rustambek qizi

Student of NamSU, junior

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Annotation: This article explores Content and Language Integrated Learning, benefits of CLIL coaching, what are the blessings of being bilingual, what are the advantages of CLIL method, how can instructors and colleges get the advantages of CLIL.

Keywords: Content, Language, Benefits of CLIL coaching approach If you're inquisitive about bilingual education, you've probably already encountered the time period CLIL — Content and Language Integrated Learning. The CLIL method includes studying approximately any other issue (the "content material") even as concurrently mastering the goal overseas language (the "incorporated studying"). Beyond knowledge what CLIL is, it's essential to apprehend why a CLIL method is beneficial. In this article, we'll study a number of the blessings of CLIL and the blessings of the use of this technique. Learn a way to placed CLIL into exercise to your institute with Bridge's Specialized Certificates in Content and Language Integrated Learning.

What are the blessings of being bilingual? Let's first lower back up simply a chunk and have a take a observe the wider discipline of bilingual education. Why is it vital? Studies the use of mind imaging strategies and different neurological checks have proven that there are real cognitive advantages from getting to know some other language, amongst them: Better communicate and interpersonal abilities. Bilingual human beings are greater unique of their phrase alternatives in each languages, and due to their focus of ability issues in communicate, they're extra touchy to capacity misunderstandings. Improved cognitive function. Bilingual human beings are extra bendy, and higher capable of alternate among responsibilities quickly. Memory is improved, and there's even proof that bilingualism can thrust back or as a minimum put off age-associated cognitive declines. Physical modifications to the mind. When bilingual and monolingual human beings are uncovered to a easy sound, research display that the blood float to the mind is better in bilingual humans. There is a correlation among how nicely you talk a 2d language, in addition to how younger you're while you study it, and the quantity of grey count in a few regions of the mind. In addition to the cognitive advantages, bilingual humans have get admission to to any other subculture and might discover greater artwork and literature in addition to journey and process possibilities.





What are the advantages of CLIL method? Within the sector of bilingual education, CLIL is extensively reputable as an powerful method. In fact, instructors discover that CLIL college students enhance their ratings withinside the language elegance and the problem location magnificence — or even their local language! Why does this happen? It's a end result of CLIL's interest to the goal language, the content material location, and additionally mastering capabilities themselves. Here are a number of the particular blessings. Learn approximately different famous ESL coaching methods.

A deeper knowledge of the goal language As college students analyze content material withinside the 2d language, they shape hyperlinks of their minds among their first language (or L1), the goal language (L2), and the content material. This fosters higher metalinguistic abilities: the capacity to mirror on language and meaning. They find out how languages paintings, in different words. Children who look at the policies of grammar of a 2nd language continuously locate themselves higher grammarians of their local language; every language may be studied thru the lens of the different.

Mastery of a concern While at the beginning development withinside the content material region might also additionally appear slower because the college students also are running of their L2, there's capacity for extra revision and deeper gaining knowledge of. Key ideas are strengthened withinside the language study room, and there are masses of possibilities for reviewing and recycling each statistics and language. A technology instructor may train how photosynthesis works even as introducing the important L2 vocabulary; later, withinside the language magnificence, the instructor ought to paintings on presentation talents, having college students provide an explanation for photosynthesis withinside the L2 thru a proper presentation, bringing in all of the useful language for scaffolding an oral presentation, operating with visible aids, managing target target market questions, and so on. Find out how study room shows issue into inquiry-primarily based totally studying. Improved social and crucial questioning abilities The identical blessings to communicative capacity that accrue to bilingual humans in widespread of direction come to college students in a CLIL software, and that they have greater possibilities to place the ones abilities into exercise as they circulate among the language study room and the problem study room. The language trainer would possibly train methods of agreeing, disagreeing, and soliciting for rationalization after which have college students practice the ones abilities to speak about a ancient occasion and its consequences. The records instructor would possibly then





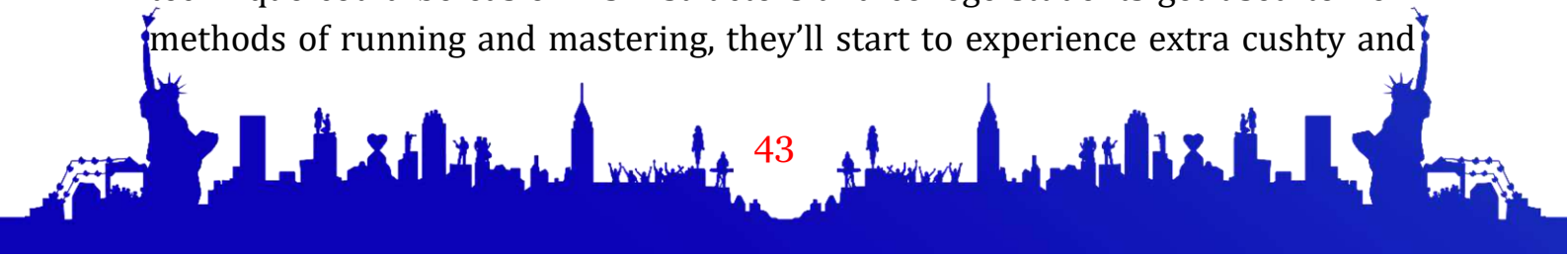
arrange a debate on whether or not sure movements withinside the beyond have to or ought to now no longer had been taken, and college students will once more use their linguistic competencies.

A stronger, extra bendy mind Students in a CLIL software do greater than simply examine a language — they research withinside the language, so they're continuously the use of the language and improving. The language trainer explains the meanings of key vocabulary for chemistry, after which of their chemistry magnificence, college students can use the vocabulary in context as they conduct, discuss, and write up an experiment.

What styles of college students or faculty settings get the maximum gain from making use of the CLIL technique? CLIL works fine for topics with a cultural thing that scholars may be uncovered to along side the language and the content material — for example, social sciences, the arts, a few tough sciences, and a few vocational/technical trades. Schools that prefer institution paintings and tasks are especially properly-ideal to CLIL. As for college students, CLIL works superbly with a lot of ages, levels, and persona types. Many college students discover CLIL methodologies intrinsically interesting, that can upload the important thing factor of motivation to their research.

How can instructors and colleges get the advantages of CLIL? A CLIL software doesn't come collectively in a single day neither is it some thing one or instructors can perform alone. A hit CLIL software desires the knowledge and help of the administration, a shape that fosters communicate amongst content material and language instructors, and outreach to convey dad and mom in addition to college students on board. The Bridge Specialized Certificates in Content & Language Integrated Learning (CLIL) teach all stakeholders withinside the underpinning philosophy of this technique and the way to observe it institute-huge to provide tremendous getting to know results for college students. If you're new to coaching, you'll need to get preliminary education and qualification with a TEFL certificate. You can discover our on-line TEFL guides to get started!

What are a few demanding situations to the use of CLIL? Many of the demanding situations of adopting CLIL method come at the start of setting up the curriculum, so if all stakeholders are absolutely skilled in CLIL principle and programs and paintings collectively to put in force what they've learned, the organization can recover from those preliminary hurdles, and keeping the technique could be easier. As instructors and college students get used to new methods of running and mastering, they'll start to experience extra cushty and

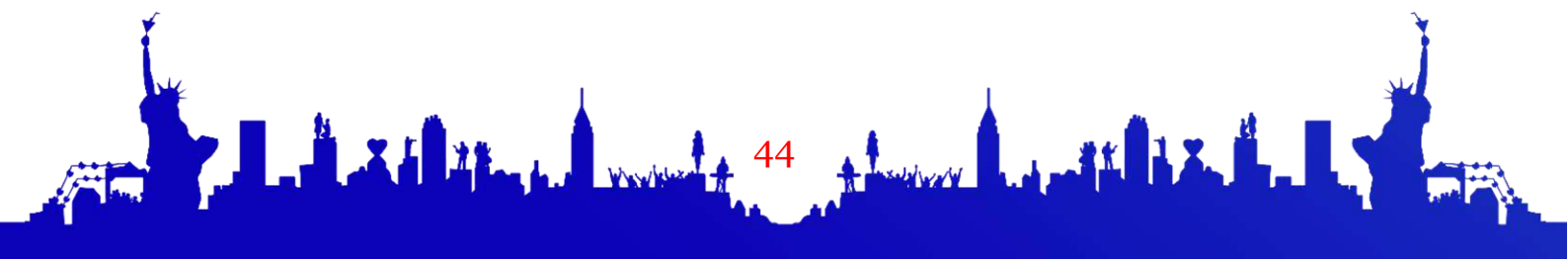




notice measurable results, and with familiarity and alertness will come the rewards of CLIL. A success CLIL application can't most effectively convey instantaneously advantages to college students of their language and difficulty place lessons however within the long time can enhance their cognitive abilities, lead them to higher communicators, and flip them into enthusiastic and a success lifelong learners. And the ones are advantages really well worth operating for.

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NAKARBOKSIMETILTSELLYULOZANI GETEROGEN SHAROITDA PARCHALASH VA GETEROGEN KATALIZ, GETEROGEN TIZIM: XUSUSIYATLARI, TASNIFI VA USULLARI

Beknazarova Mukambar Erkinovna¹

Saypiyev Tursunpulot Sobitovich²

¹Kosonsoy tuman XTB ga qarashli 10- sonli umumta'lim
maktabining kimyo fani o'qituvchisi

²NamDU Kimyo (Organika va biorganika) magistratura
mutaxassisligi 2- kurs magistratura talabasi
<https://doi.org/10.5281/zenodo.7045406>

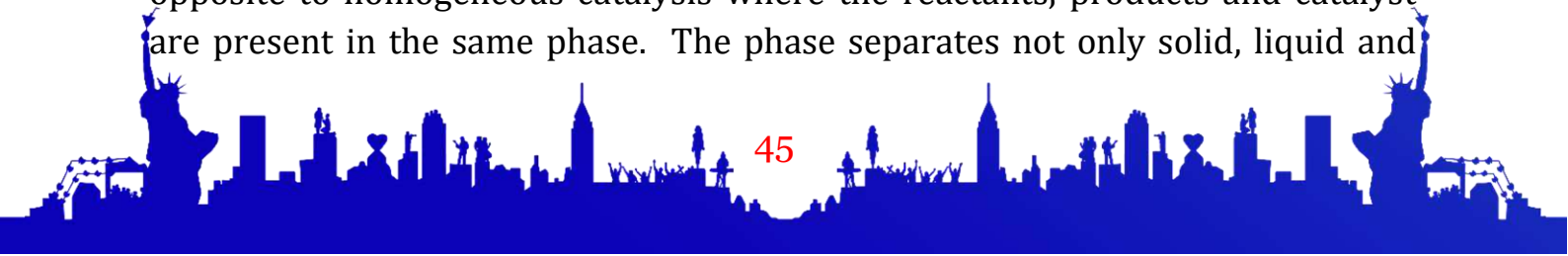
Annotatsiya: Kimyo fanida, heterojen kataliz bu kataliz qaerda bosqich katalizatorlarnikidan farq qiladi reaktiv moddalar yoki mahsulotlar. Jarayon qarama-qarshi bir hil kataliz bu erda reaktiv moddalar, mahsulotlar va katalizator bir xil bosqichda mavjud. Faza nafaqat ularni ajratib turadi qattiq, suyuqlik va gaz komponentlar, shuningdek aralashmaydigan aralashmalar (masalan, moy va suv) yoki interfeys mavjud bo'lgan har qanday joyda. Katalizatorlar foydalidir, chunki ular reaksiya tezligini oshiradi o'zlarini iste'mol qilmasdan va shuning uchun qayta foydalanish mumkin. Maqolada Nakarboksimetiltsellulozani geterogen sharoitda parchalash va Geterogen kataliz, Geterogen tizim: xususiyatlari, tasnifi va usullari haqida yoritilgan.

Kalit so'zlar: Geterogen, tizim, kataliz, xususiyatlari, tasnif, usullar, turlar.

Аннотация: В химии гетерогенный катализ — это катализ, стадия которого отличается от стадии реагентов или продуктов катализатора. Процесс противоположен гомогенному катализу, когда реагенты, продукты и катализатор находятся в одной фазе. Фаза разделяет не только твердые, жидкие и газообразные компоненты, но и несмешивающиеся смеси (например, нефть и вода) или везде, где есть граница раздела. Катализаторы полезны, потому что они увеличивают скорость реакции, не расходуясь сами по себе, и поэтому могут использоваться повторно. В статье описано разложение накарбоксиметилцеллюлозы в гетерогенных условиях и гетерогенный катализ, гетерогенная система: свойства, классификация и методы.

Ключевые слова: гетерогенная система, катализ, свойства, классификация, методы, виды.

Abstract: In chemistry, heterogeneous catalysis is catalysis where the step is different from that of the catalysts reactants or products. The process is opposite to homogeneous catalysis where the reactants, products and catalyst are present in the same phase. The phase separates not only solid, liquid and





gas components, but also immiscible mixtures (for example, oil and water) or wherever there is an interface. Catalysts are useful because they increase the rate of a reaction without being consumed themselves and are therefore reusable. The article describes the decomposition of Nacarboxymethylcellulose under heterogeneous conditions and Heterogeneous catalysis, Heterogeneous system: properties, classification and methods.

Key words: Heterogeneous, system, catalysis, properties, classification, methods, types.

Geterojen kataliz odatda qattiq fazali katalizatorlar va gaz fazali reaktivlarni o'z ichiga oladi. Bunday holda katalizator yuzasida sodir bo'ladigan molekulyar adsorbsiya, reaksiya va desorbsiya tsikli mavjud. Termodinamika, massa uzatish va issiqlik uzatish ta'sir qiladi reaksiya tezligi (kinetikasi).

Geterojen kataliz juda muhim, chunki u tezroq, keng miqyosda ishlab chiqarishga va tanlab mahsulot hosil qilishga imkon beradi. Dunyo YalMning taxminan 35% kataliz ta'sirida.[5] 90% kimyoviy moddalarni ishlab chiqarishga (hajmi bo'yicha) qattiq katalizatorlar yordam beradi. [

Geterojen aralashmalarining xususiyatlari

Ular bir xil emas

Heterojen bo'lmagan aralashmaning asosiy xarakteristikasi - bu bir xillikning yo'qligi, ya'ni tashqi ko'rinishi bir xil bo'lishi yoki xususiyatlari ko'rib chiqilganda yoki tahlil qilinadigan joyda farq qilmaydi. Kuzatuv shkalasiga ko'ra ikkitadan ko'p ajralib turadigan faza yoki tarkibiy qismlarga ega bo'lish orqali bir xillik buziladi.

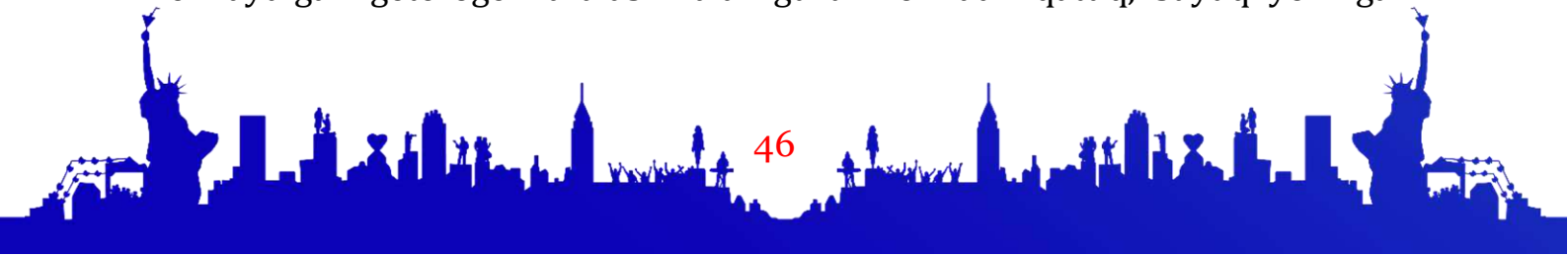
Masalan, plyaj tagida qum zarralari, mayda toshlar, o'simlik va hayvonot materiallari mavjud. E'tibor bering, ushbu misolda va boshqalarda heterojen aralashmaning bir xil emasligi ularning ranglari farqi yoki kontrasti bilan o'lchanadi.

Ularning ustun fazasi bor

Heterojen bo'lmagan aralashmalar ustun fazaga ega, bu boshqalarga qaraganda ko'proq mutanosib ravishda topiladi. Ushbu faza qum, suyuq yoki gazsimon donalar singari qattiq bo'lishi mumkin va odatda shunday deyiladi tarqatuvchi faza. Buning o'rniga ozchilik fazasi chaqiriladi tarqalgan faza.

Ular bir vaqtning o'zida bir nechta moddaning holatini taqdim etadilar

Dispers faza, shuningdek dispers faza moddalarining holatiga qarab, xarakteristikalari moddaning fizik holatlariga to'liq mos keladigan yoki mos kelmaydigan geterojen aralashmalar guruhi olinadi: qattiq, suyuq yoki gaz.





Masalan, plyaj tuprog'i qattiq smorgasborddir. Boshqa misollarni keyinroq keltiramiz.

Geterogen aralashmalar turlari

Qattiq

Tuproq, mevali savatlar, yasmiq bilan guruch va ko'plab rang-barang kristallardagi minerallar qattiq heterojen aralashmalarga misoldir. Bular ularni ajratish usuli jihatidan eng sodda va ular, ehtimol, eng xilma-xildir.

Qattiq heterojen aralashmalarning qo'shimcha namunalari misollar bo'limida ko'rib chiqiladi.

To'xtatib turish

Ushbu ibora: "osmonda osilgan yulduzlar", suspenziyalar nima ekanligini tushunishga yordam beradi. Ushbu turdagi heterojen aralashmaning ustun bo'lgan suyuqlik fazasidan iborat bo'lib, u bir oz kuch sarflab qadrlanishi mumkin bo'lgan kichik qattiq zarrachalarni joylashtiradi yoki tarqatadi.

Masalan, suv va qum aralashtirilib, stakanda aralashtirilganda dastlab suspenziya paydo bo'ladi. Biroq, vaqt o'tishi bilan, xuddi shu tortishish shisha ostidagi qum zarralarini cho'ktirish bilan tugaydi, bu esa geterogen suv-qum aralashmasining notekis yoki bir xil bo'lmaganligini namoyish etadi.

Kolloidlar

Qum o'rniga ancha uzoqroq turishga qodir bo'lgan kichikroq zarrachalar tarqalib ketgan bo'lsa-chi? Keyinchalik biz kolloidga duch kelamiz, uning ustun yoki tarqaladigan fazasi qattiq, suyuq yoki gaz bo'lishi mumkin.

Tarqoq zarrachalar shunchalik kichikki, bir qarashda kolloidlar bir hil aralashmalar tasnifiga ko'rinadigan bir xilligi sababli tushadi. Shu bilan birga, mikroskop ostida yoki kuzatuvning quyi miqyoslarida tahlil qilinganida kolloid bir nechta faza yoki komponentni ko'rsata boshlaydi.

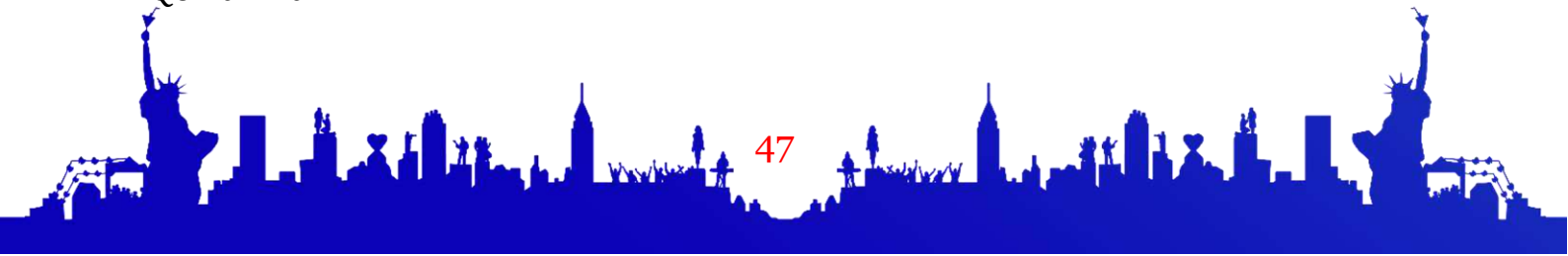
Suv-moy aralashmasi kolloidning mumtoz namunasi, chunki u aralashmaydigan ikkita suyuqlikdan iborat (ular o'zaro suyultirilmaydi). Boshqa kolloidlar qon, mayonez va sutdir.

E'tibor bering, ushbu misollar umumiy bo'lib, ular bir qarashda bir hil bo'lib ko'rinadi va ular yana tahlil qilinmaguncha heterojen aralashmalar deb hisoblanmaydi.

Geterogen aralashmalarni ajratish usullari

Geterogen aralashmaning tarkibiy qismlarini birma-bir olish uchun ko'plab ajratish usullari mavjud. Quyida faqat eng muhimlari aytib o'tiladi.

Qo'llanma





Barcha usullardan bu kichik miqyosda eng sodda. Agar bizda kakao yoki shokolad bo'laklari bo'lgan pirojniy bo'lsa, ularni xuddi shu barmoqlarning ta'sirida yoki pinset yordamida olib tashlash mumkin. Xuddi shu narsa yasmiq solingan guruchga ham tegishlidir, bu erda yasmiq o'z qo'llarimizdan boshqa vositalar yoki asboblarsiz sabr-toqat bilan aralashtiriladi.

Dekantatsiya

Suyuqlikni qattiq suyuqlikdan ajratib olishdan iborat bo'lib, oddiy quyish harakati bilan filtr yoki elakka ehtiyoj sezilmaydi. O'rnatish yordamida suvni stakan yoki idishning pastki qismida joylashgan qumdan ajratish mumkin.

Filtrlash

Bu filtr yordamida qattiq moddalarni suyuqlikdan ajratib olishdan iborat bo'lib, u suyuqlik o'tishi uchun qattiq zarralarni ushlab turadi. Ushbu usul qumning cho'kishini kutmasdan, yangi tayyorlangan suv-qum suspenziyasiga qo'llanilishi mumkin. Oqish juda tez-tez takrorlanadi yoki laboratoriya ishlarida tez-tez uchraydi.

Elakdan o'tkazish

Filtrlashga o'xshab, bizda elak bor, u qattiq heterojen aralashmaning tarkibiy qismlarini ularning donalari kattaligi farqiga qarab ajratish uchun ishlatiladi. Ushbu usul, masalan, qumni yanada mustahkam yoki yirik toshlardan ajratish uchun ishlatilishi mumkin.

Bug'lanish

Bug'lanish odatda bir hil aralashmalarining tarkibiy qismlarini, masalan, eritmalarini ajratish uchun ajratiladi. Shu bilan birga, uni ba'zi bir kolloidlarning ko'rinadigan bir xilligini buzish uchun ham qo'llash mumkin. Issiqlik orqali eng past qaynash harorati bo'lgan suyuqlik avval bug'lanib, boshqa tarkibiy qismlarni qoldiradi.

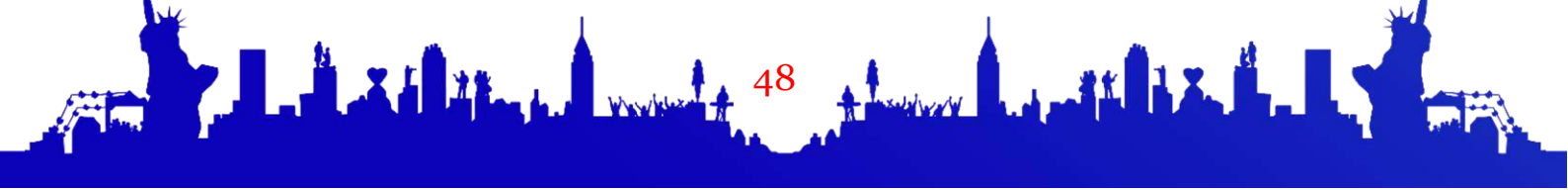
Yog 'va oqsilni sutni tashkil etadigan suvdan ajratish uchun past bosimli bug'lanishdan foydalanish mumkin. Bu quruq sutni olishning eng muhim bosqichlaridan biridir.

Eritish

Eritishni ajratish usuli asosan qattiq heterojen aralashmalar, ayniqsa mineralogik tipdagi aralashmalar uchun ajratilgan. Sirtida ko'rinadigan iflosliklar, aralashmani suvda yoki suyultirilgan xlorid kislotada cho'milish natijasida bir xil bo'ladi.

Magnit ajratish

Oldingi holatga o'xshash magnit ajratish asosan qattiq aralashmalar uchun qo'llaniladi, bu erda tarkibiy qismlardan kamida bittasi magnit magnit





maydonining tortilishiga javob berishi kerak. Temir zarralari ushbu usul bilan ajratilishi mumkin bo'lgan komponentning klassik namunasini aks ettiradi.

Geterogen aralashmalarga misollar

Kek yoki pirojnoe

Kek yoki pirojniyning o'zi, shu jumladan uni tayyorlash paytida hosil bo'lgan barcha tarkibiy qismlar, birinchi qarashda taniqli moddiy fazaga aylanadi. Ayni paytda, shokolad tomchilari, sirt ustida yorilib, yana bir qattiq material fazasini anglatadi.

Yupiter qobig'i

Yupiter sayyorasining gazsimon qobig'i bir nechta ajralib turadigan fazaga ega va hattoki ulkan qizg'ish joyi ham o'z ichiga oladi. Bu bir xil bo'lmaganlik, o'zining notekis ko'rinishi bilan birga, masshtabdagi smorgasbordga xosdir. Yupiterning yadrosi yo'nalishi bo'yicha qanchalik chuqurlashsangiz, rasm shunchalik heterojen bo'ladi.

Parterres (O'simliklar va gullar bilan bog')

Gulzorlar gullar uning tarkibiy qismlari bo'lgan heterojen aralashmalarning yana bir namunasidir. Shunga qaramay, gullar qanchalik ko'p bo'lsa va ularning ranglari qanchalik xilma-xil bo'lsa, gulzor shunchalik heterojen ko'rinadi. Bu holat gazakka yoki har qanday shirinlik klasteriga o'xshaydi.

Adsorbtsiya

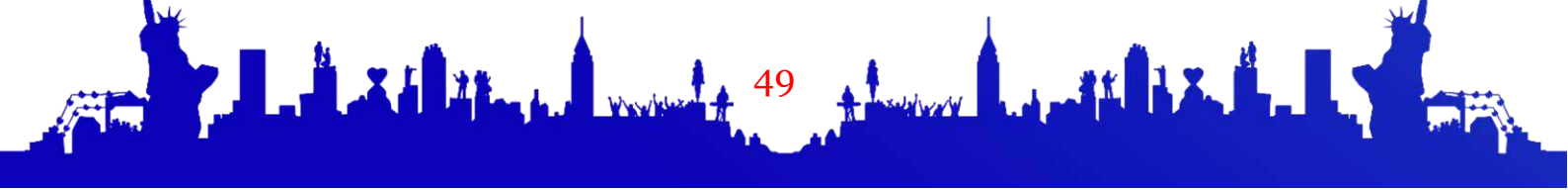
Adsorbtsiya heterojen katalizning muhim bosqichidir. Adsorbtsiya - bu gaz (yoki eritma) faza molekulasi (adsorbat) sirt (va adsorbent) ning qattiq (yoki suyuq) yuza atomlari bilan bog'lanish jarayoni. Adsorbtsiyaning teskari tomoni quyidagicha desorbtsiya, adsorbentning adsorbentdan ajralishi. Geterogen kataliz yordamida osonlashtiriladigan reaksiyada katalizator adsorbent, reaksiyaga kirishuvchi moddalar adsorbatdir.

Adsorbtsiya turlari

Adsorbtsiyaning ikki turi tan olinadi: fizizortsiya, zaif bog'langan adsorbtsiya va xemosorbtsiya, kuchli bog'langan adsorbtsiya. Geterogen katalizdagi ko'plab jarayonlar ikki chekka o'rtasida yotadi. The Lennard-Jons modeli atomlarni ajratish funksiyasi sifatida molekulyar o'zaro ta'sirlarni bashorat qilish uchun asosiy asos yaratadi.

Fizorbsiya

Fizorbsiya jarayonida molekula sirdagi atomlarga tortiladi van der Waals kuchlari. Bularga dipol-dipol o'zaro ta'sirlari, induktsiyalangan dipol o'zaro ta'sirlari va London dispersiyasi kuchlari kiradi. E'tibor bering, adsorbat va adsorbent o'rtasida kimyoviy bog'lanishlar hosil bo'lmaydi va ularning elektron





holatlari nisbatan bezovtalanmaydi. Fizorbttsiya uchun odatdagi energiya 3 dan 10 kkal / mol gacha.[3] Geterogen katalizda reaktiv molekulasi katalizatorga fiziologik ta'sir o'tkazganda, u odatda prekursor holatida, chemisorbttsiya oldidan oraliq energiya holatida, yanada kuchli bog'langan adsorbttsiyada deyiladi. Kashshoflik holatidan boshlab molekula ham xemosorbttsiya, desorbttsiya yoki sirt bo'ylab migratsiyadan o'tishi mumkin. Prekursor holatining tabiati reaksiya kinetikasiga ta'sir qilishi mumkin.

Xemosorbttsiya

Agar molekula sirt atomlariga etarlicha yaqinlashganda, ular shunday bo'ladi elektron bulutlari bir-birining ustiga chiqish, xemosorbttsiya sodir bo'lishi mumkin. Xemosorbttsiyada adsorbat va adsorbentlar hosil bo'lishini anglatuvchi elektronlarni bo'lishadi kimyoviy aloqalar. Xemosorbttsiya uchun odatdagi energiya 20 dan 100 kkal / mol gacha. Xemosorbttsiyaning ikkita holati:

Molekulyar adsorbttsiya: adsorbat butunligicha qoladi. Masalan, alkenni platina bilan bog'lash.

Dissotsiatsiya adsorbttsiyasi: adsorbttsiya bilan bir yoki bir nechta bog'lanish bir vaqtda buziladi. Bunday holda, to'siq ajralish adsorbttsiya tezligiga ta'sir qiladi. Bunga misol H ning bog'lanishi² adsorbttsiyada H-H aloqasi uzilgan metall katalizatorga.

Yuzaki reaksiyalar

Reaksiya koordinatasi. (A) kataliz qilinmagan (B) katalizlangan (C) aqli qidiruv vositalar bilan katalizlangan (o'tish holatlari)

Ko'pgina metall sirt reaksiyalari tomonidan sodir bo'ladi zanjirning tarqalishi unda katalitik oraliq mahsulotlar tsiklik ravishda ishlab chiqariladi va iste'mol qilinadi. $A + B \rightarrow C$ uchun sirt reaksiyalarining ikkita asosiy mexanizmini tavsiflash mumkin.

Langmuir-Xinshelvd mexanizmi: reaktiv molekulari A va B ikkalasi ham katalitik sirtga adsorbttsiyalanadi. Ular sirtga adsorbttsiyalangan holda, ular birlashib, C mahsulotini hosil qiladi, so'ngra ular parchalanadi.

Eley-Rideal mexanizmi: bitta reaktiv molekula A katalitik sirtga adsorbttsiyalanadi. Adsorbttsiyasiz, B so'rilgan A bilan reaksiyaga kirib, C hosil qiladi, so'ngra sirdan ajralib chiqadi.

Ko'pgina heterojen katalizlangan reaksiyalar Langmuir-Xinshelvd modeli tomonidan tavsiflangan.

Geterogen katalizda reaktiv moddalar tarqoq quyma suyuqlik fazasidan yutish katalizator yuzasiga Adsorbttsiya joyi har doim ham faol katalizator joyi emas, shuning uchun reaktiv molekulari sirt bo'ylab faol uchastkaga o'tishi kerak.





Faol joyda reaktiv molekular katalitik oraliq moddalar orqali energetik jihatdan osonroq yo'lni bosib mahsulot molekularini hosil qilish uchun reaksiyaga kirishadi (o'ngdagi rasimga qarang). Keyin mahsulot molekulari sirtidan ajralib chiqadi va tarqaladi. Katalizatorning o'zi buzilmaydi va keyingi reaksiyalarda vositachilik qiladi. Kuzatilgan reaksiya tezligida issiqlik va massa uzatish kabi transport hodisalari ham rol o'ynaydi.

Katalizator dizayni

Seolit tuzilishi. Hidrokrekingda keng tarqalgan katalizatorni qo'llab-quvvatlovchi material. Uglevodorodni alkillash va izomerizatsiyalashda katalizator vazifasini ham bajaradi.

Katalizatorlar butun yuzasi bo'ylab reaktivlarga nisbatan faol emas; faqat ma'lum joylar katalitik faollikka ega, deyiladi faol saytlar. Qattiq katalizatorning sirt maydoni mavjud bo'lgan faol saytlar soniga kuchli ta'sir ko'rsatadi. Sanoat amaliyotida qattiq katalizatorlar ko'pincha sirtni maksimal darajada oshirish uchun gozeneklidir va odatda 50-400 m²/g ga erishadilar. Biroz mezoporous silikatlar, masalan, MCM-41, sirtlari 1000 m²/g dan katta. G'ovakli materiallar yuqori sirt maydoni-massa nisbati va katalitik faollikni kuchayishi tufayli iqtisodiy jihatdan samarali hisoblanadi.

Ko'pgina hollarda qattiq katalizator hisoblanadi tarqaldi sirtni ko'paytirish (faol joylar sonini ko'paytirish) va barqarorlikni ta'minlash uchun qo'llab-quvvatlovchi materialda. Odatda katalizator qo'llab-quvvatlaydi inert, yuqori erish nuqtasi materiallari, ammo ular o'zlari ham katalitik bo'lishi mumkin. Aksariyat katalizator tayanchlari g'ovaklidir (tez-tez uglerod, silika, seolit yoki alumina asosli)[5] va ularning yuqori sirt maydoni-massa nisbati uchun tanlangan. Muayyan reaksiya uchun reaktiv moddalar va mahsulotlar materialga kirib chiqishi mumkin bo'lgan darajada gozenekli tayanchlarni tanlash kerak.

Ko'pincha moddalar katalitik faollikka, selektivlikka va / yoki barqarorlikka ta'sir qilish uchun qasddan reaksiya ozuqasiga yoki katalizatorga qo'shiladi. Ushbu birikmalar promotorlar deb ataladi. Masalan, alyuminiy oksidi (Al₂O₃) ammiak sintezi paytida Fe-katalizatorida sinterlash jarayonlarini sekinlashtirib katta barqarorlikni ta'minlashga qo'shiladi.

Sabatier printsipi zamonaviy kataliz nazariyasining asoslaridan biri sifatida qaralishi mumkin. Sabatier printsipida ta'kidlanishicha, sirt-adsorbatlar o'zaro ta'siri eng maqbul miqdor bo'lishi kerak: reaktivlarga nisbatan inert bo'lish uchun juda kuchsiz emas va sirtni zaharlashi va mahsulotlarning desorbsiyasini oldini olish uchun juda kuchli emas. Sirt-adsorbat o'zaro ta'siri tegmaslik bo'lishi kerak, degan gap sifat jihatidir. Odatda kimyoviy reaksiya bilan bog'liq bo'lgan





adsorbatlar va o'tish holatlari soni juda ko'p, shuning uchun tegmaslik ko'p o'lchovli makonda topish kerak. Bunday ko'p o'lchovli maydonda katalizator dizayni hisoblash uchun qulay vazifa emas. Bundan tashqari, bunday optimallashtirish jarayoni intuitiv emas. Masshtabli munosabatlar katalizator dizayni makonining o'lchovlilikini kamaytirish uchun ishlatiladi. Bunday aloqalar adsorbatlarni bog'lash energiyalari (yoki adsorbatlarni bog'lash energiyalari bilan o'tish davri holatlari o'rtasidagi o'zaro bog'liqlik) BEP munosabatlari) "etarlicha o'xshash" bo'lganlar, masalan, OH va OOH o'lchovlari. Katalizator dizayni muammolariga miqyosli munosabatlarni qo'llash kosmik o'lchamlarni sezilarli darajada pasaytiradi (ba'zan 1 yoki 2 gacha). Maxsus bosim yoki harorat sharoitida adsorbsiya, reaksiya va molekularning desorbsiyasi bilan bog'liq kinetikani hisobga olish uchun bunday miqyosli aloqalarga asoslangan mikro-kinetik modellashtirishdan ham foydalanish mumkin. Keyinchalik bunday modellashtirish taniqli vulqon uchastkalariga olib keladi, unda Sabatier printsipi tomonidan sifatli ravishda tavsiflangan maqbullik "vulqon tepasi" deb nomlanadi. Miqyosli munosabatlar nafaqat energetikani ulash uchun ishlatilishi mumkin radikal sirtan adsorbsiyalangan guruhlar (masalan, O *, OH *), shuningdek, energetikasini ulash uchun yopiq qobiq molekular bir-birlari orasida yoki o'zlarining hamkori radikal adsorbatlarida. Yaqinda katalitik ilm-fan tadqiqotchilari uchun muammo - bu miqyosli munosabatlarni "buzish". Miqyosdagi munosabatlarda namoyon bo'ladigan korrelyatsiyalar katalizatorning dizayn maydonini cheklaydi va "vulqon tepasiga" chiqishga imkon bermaydi.

Kattalashtirish munosabatlarini buzish yoki miqyosli munosabatlarga rioya qilmaydigan sirtlarni yoki motiflarni loyihalashni yoki boshqa miqyosli munosabatlarni (bog'langan adsorbatlar uchun odatiy aloqadan) to'g'ri yo'nalishda kuzatishni nazarda tutishi mumkin: bizni reaktivlik vulqoni tepasida. Katalitik reaktivlikni o'rganishdan tashqari, miqyosli munosabatlar maxsus mahsulotga nisbatan selektivlik uchun materiallarni o'rganish va ekranlash uchun ishlatilishi mumkin. Maxsus mahsulotlarni boshqalardan ustun qo'yadigan majburiy energiyaning maxsus kombinatsiyasi mavjud. Ba'zan selektivlikni bir-biriga aniq mahsulot "shkalasi" tomon o'zgartirishi mumkin bo'lgan bog'lanish energiyasining to'plami, shu bilan selektivlikni yaxshilash uchun ba'zi miqyosli munosabatlarni buzish kerak bo'ladi; metanni metanolga to'g'ridan-to'g'ri konvertatsiya qilishda selektivlikning yo'qligiga olib keladigan metan va metanol oksidlovchi faollashuv energiyalari o'rtasidagi masshtablash bunga misoldir.





Katalizatorni o'chirish

Katalizatorni o'chirish vaqt o'tishi bilan katalitik faollikning yo'qolishi va / yoki selektivlik sifatida tavsiflanadi.

Reaksiya tezligini pasaytiradigan moddalar deyiladi zahar. Zaharlar katalizator yuzasiga xemisorb qiladi va reaktiv molekulalarining bog'lanishi uchun mavjud bo'lgan faol joylar sonini kamaytiradi. Umumiy zaharlarga V, VI va VII guruh elementlari (masalan, S, O, P, Cl), ba'zi zaharli metallar (masalan, As, Pb) va ko'p bog'langan adsorbsiyalash turlari (masalan, CO, to'yinmagan uglevodorodlar) kiradi. Masalan, oltingugurt Cu / ZnO katalizatorini zaharlash orqali metanol ishlab chiqarishni buzadi.[24] Reaksiya tezligini oshiruvchi moddalar deyiladi targ'ibotchilar. Masalan, ammiak sintezida ishqoriy metallarning borligi N ning tezligini oshiradi2 ajralish.

Zahar va promotorlarning borligi tezlikni chegaralovchi pog'onaning aktivizatsiya energiyasini o'zgartirishi va katalizatorning ma'lum mahsulotlarni hosil qilish uchun selektivligiga ta'sir qilishi mumkin. Miqdoriga qarab, modda kimyoviy jarayon uchun qulay yoki noqulay bo'lishi mumkin. Masalan, etilen ishlab chiqarishda oz miqdordagi xemisorbalangan xlor CO dan etilenga nisbatan Ag-katalizator selektivligini oshirib, targ'ibotchi vazifasini bajaradi.2, juda ko'p xlor zahar vazifasini bajaradi.

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