

Texnologiya fanini o'qitishda interfaol usullarni qo'llash metodikasining ayrim jihatlari

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Annotatsiya: Ushbu maqolada texnologiya fani darslarida interfaol metodlardan biri grafikli organayzerlardan foydalanish metodikasi "Klaster", "Venna diagrammasi", "Konseptual jadval" misolida ishlab chiqilgan. Ushbu metodlarning afzallik va kamchiliklari ham yoritilgan.

Kalit so'zlar: Grafikli organayzerlar, "Klaster", "Venna diagrammasi", "Konseptual jadval"

Some aspects of methodology of interactive methods of learning technology

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Abstract: This article has developed one of the interactive methods in technology lessons using the method of graphic organizers using the example of "Cluster", "Venn Diagram", "Conceptual Table". The advantages and disadvantages of these methods are also highlighted.

Keywords: Graphic organizers, "Cluster", "Venn diagram", "Conceptual table".

KIRISH

Bugungi kunda pedagogika sohasida yangi ilmiy yo'nalish - pedagogik innovatsiya va ta'lim jarayonini yangilash g'oyalarining paydo bo'lishi natijasida o'qituvchining pedagogik faoliyatida ham yangi yo'nalish "o'qituvchining innovatsion faoliyati" tushunchasi paydo bo'ldi.

Innovatsion texnologiyalarning assosiy negizi - bu o'qituvchi va o'quvchining belgilangan maqsaddan kafolatlangan natijaga hamkorlikda erishishlari uchun oldindan ta'lim jarayonini loyihalashdir.

Texnologiya fanidan darslarni innovatsion pedagogic texnologiyalar asosida tashkil etishda grafikli organayzerlardan foydalanish muhim ahamiyat kasb etadi. Bu esa o'quvchilarni darslarda faol ishtirok etishini, ta'lim mazmuniga oid o'rganilayotgan tushunchalarni, murakkablik darajalari turlicha bo'lgan mavzularni, fanlararo amalga oshirilayotgan aloqadorlik va o'zaro bog'liqlik o'rnatishni, tahlil

qilish, solishtirish va taqqoslash, topshiriqli muammolarni aniqlash, ularni hal etish va berilgan amaliy topshiriqlarni rejalashtirish, tafakkur qilish va ijodkorlik qobiliyatlarini rivojlantirishga xizmat qiladi.

Grafikli organayzerlar (tashkil etuvchi) - fikriy jarayonlarni ko'rgazmali taqdim etish vositasi hisoblanadi.

ASOSIY QISM

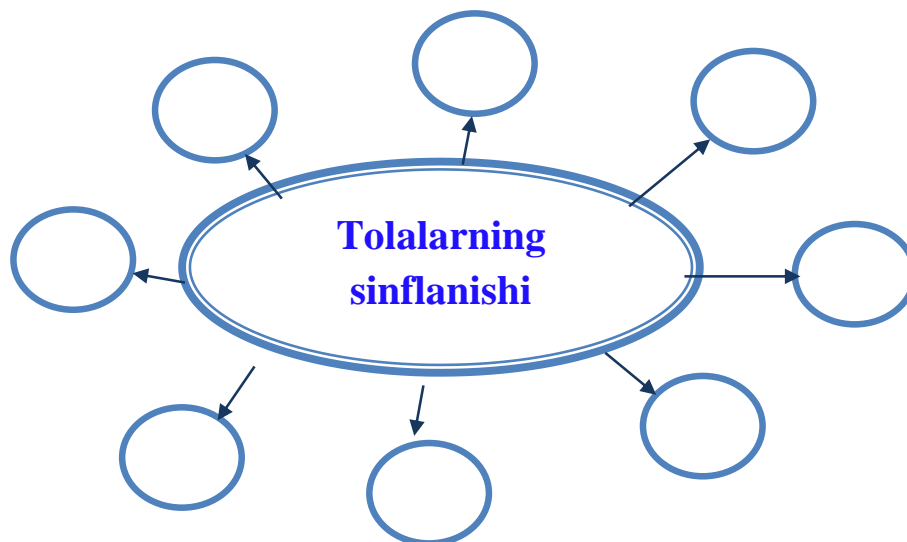
Texnologiya fanidan darslarda grafikli organayzerlardan foydalanish muhim ahamiyatga ega bo'lib, mavzuga oid ma'lumotlarni og'zaki ravishda o'zlashtirish ko'rsatkichi 10% bo'lgan sharoitda dars o'tish samarasiz bo'ladi. Darslar davomida o'quvchilarga o'quv materialni ko'rgazmali shaklda taqdim etish lozim. O'quv materialini ko'rgazmali taqdim etish orqali o'qitish samaradorligi natijaviyligiga erishish mumkin. Chunki, xalqimizda bir naql bor «Ming marta eshitgandan ko'ra, bir marta ko'rgan yaxshi».

Shunday ekan, yuqorida keltirilgan fikrlardan foydalanib, grafikli organayzerlardan "Tikuvchilik materialshunosligi" darslarida qo'llanilishini "Tabiiy tollalar" mavzusida ko'rib chiqamiz:

1. Tabiiy tola turlarini klasterda tasvirlang.

Klaster - (tutam, bog'lam) - axborot xaritasini tuzish yo'li - barcha tuzilmaning mohiyatini markazlashtirish va aniqlash uchun qandaydir biror asosiy omil atrofida g'oyalarni yig'ish.

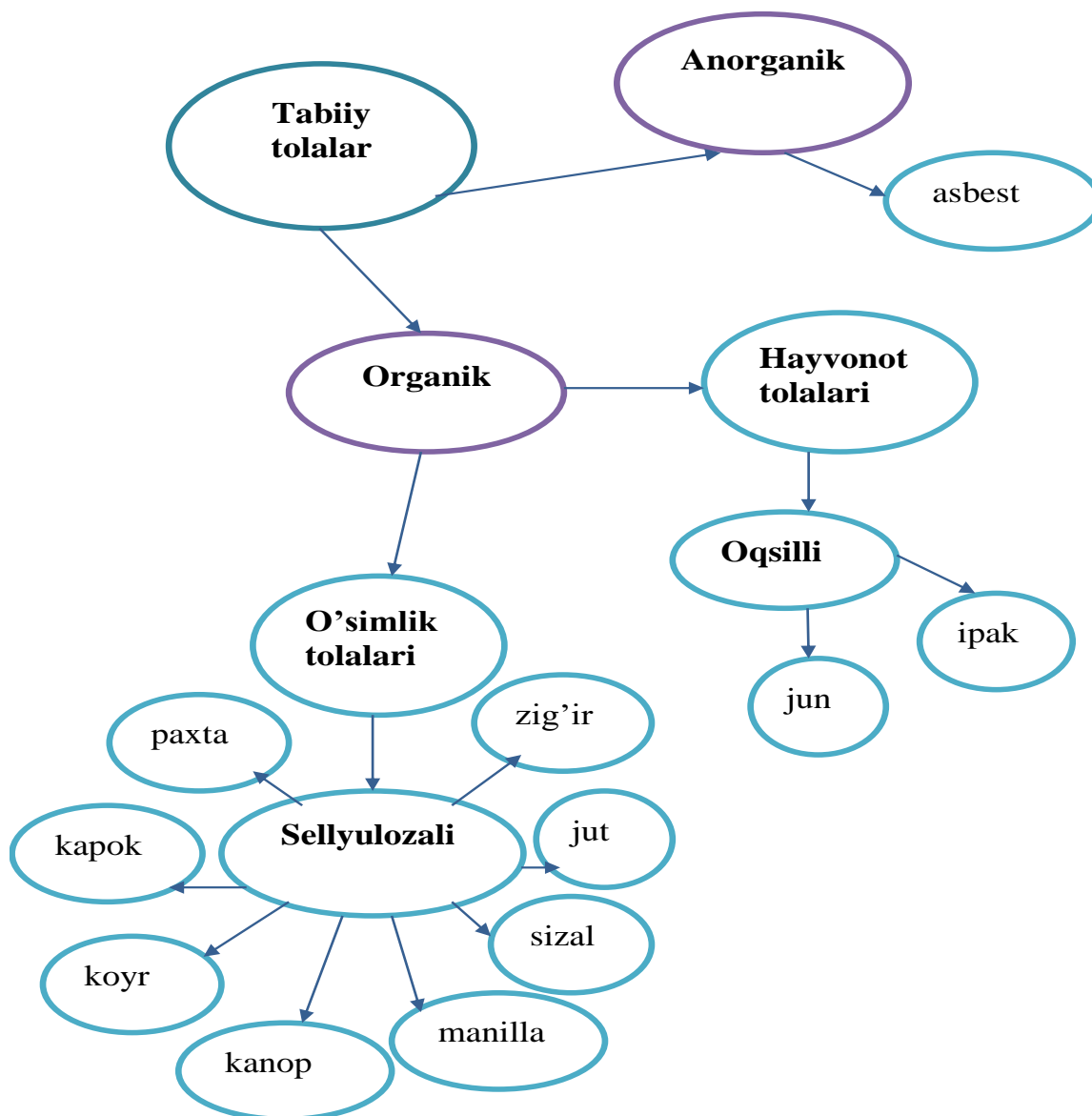
Bilimlarni faollashtirishni tezlashtiradi, fikrlash jarayoniga mavzu bo'yicha yangi o'zaro bog'lanishli tasavvurlarni erkin va ochiq jalb qilishga yordam beradi.



Klaster interfaol metodi - ta'lim oluvchini mantiqiy fikrlashga, umumiy fikr doirasini kengaytirishga, mustaqil ravishda adabiyotlardan foydalanishni o'rgatishga asoslangan. Fikrlashning tarmoqlanishi pedagogik strategiya bo'lib, u ta'lim oluvchilarning bir mavzuni chuqur o'rganishlariga yordam berib, ularni mavzuga taalluqli tushuncha yoki aniq fikrni erkin va aniq ravishda ma'lum ketma-ketlik bilan

uzviy bog‘langan holda tarmoqlanishlariga o‘rgatadi. Mazkur interfaol metod bir mavzuni chuqur o‘rganishdan avval ta‘lim oluvchilarning fikrlash faoliyatini jadallashtirish hamda kengaytirish uchun xizmat qiladi. Shuningdek, o‘tilgan mavzuni mustahkamlash, yaxshi o‘zlashtirish, umumlashtirish hamda ta‘lim oluvchilarning ushbu mavzu bo‘yicha tasavvurlarini chizma shaklida ifodalashga undaydi.

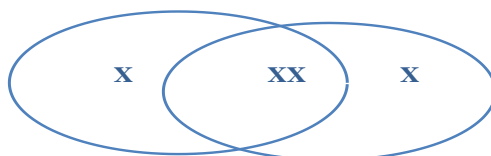
«Klaster» metodi yordamida o‘zlashtirilgan bilimlarni mustahkamlash quyidagicha amalga oshiriladi: ta‘lim oluvchilar guruhlariga bo‘linadilar va ularga belgilangan vaqt ichida mavzu bo‘yicha qanday tushunchalarni o‘zlashtirgan bo‘lsalar, ularni qog‘ozga yozish vazifasi topshiriladi. Vazifani bajarish jarayonida fikrlarning to‘g‘ri yoki noto‘g‘riligiga ahamiyat bermaslik, nimani o‘ylagan bo‘lsa, shuni yozib berish talab etiladi. YOzuvning texnik (orfografik, mantiqiy va h.k.) jihatlariga e‘tibor berilmaydi. Fikrlar tugagandan keyin guruh a‘zolari tushunchalarni mantiqiy jihatdan bir-birlariga bog‘lab chiqadilar.



Venna diagrammasi - 2 va 3 jihatlarni hamda umumiy tomonlarini solishtirish, taqqoslash yoki qarama-qarshi qo'yish uchun faoliyatni tashkil etish jarayonida qo'llaniladi.

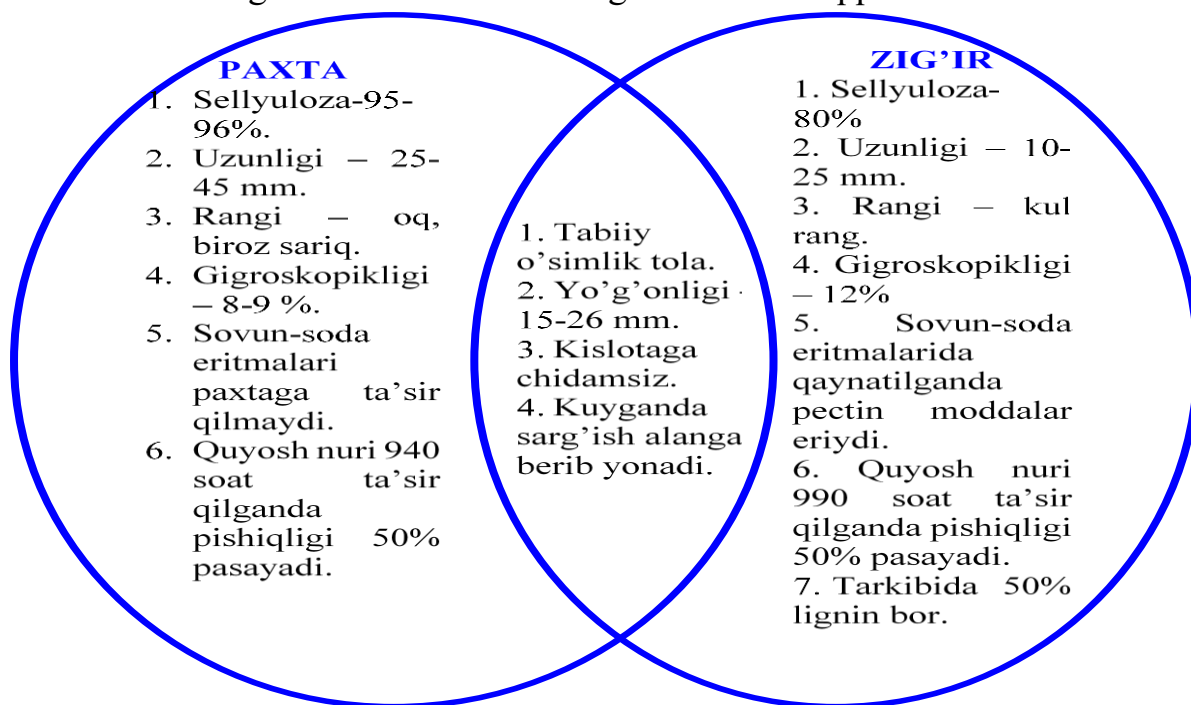
Diagrammani tuzish uch bosqichni o'z ichiga oladi. 1-bosqich: Talabalar ushbu diagrammani tuzish qoidalari bilan tanishtiriladi. 2-bosqich: YAKka, juftlikda yoki guruh ichida diagramma asosida taqqoslash faoliyati tashkil etiladi. 3-bosqich: Faoliyat natijalari tahlil qilinadi va baholanadi.

«Venn» diagrammasini tuzish uchun ikkita kesishuvchi aylana chiziladi (agar mavzuning ikki qismi solishtirilayotgan bo'lsa ikkita aylana, uchta qismi solishtirilayotgan bo'lsa uchta kesishuvchi aylana chiziladi).

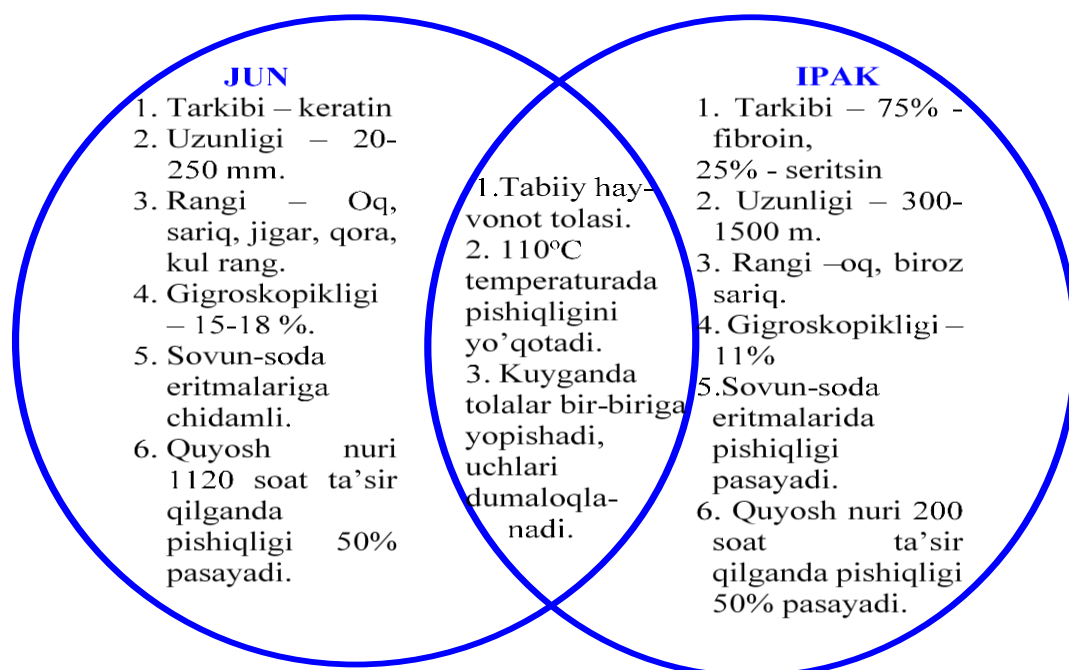


Har bir aylanaga mavzuning alohida bir qismi haqidagi asosiy ma'lumotlar kiritiladi. Doiralarning kesishuvchi joyida, ikki yoki uch doiralardagi mavzular solishtiriladi va umumiy bo'lgan ma'lumotlar ro'yxati yoziladi.

1. Paxta va zig'ir tolalarini Venna diagrammasida taqqoslash.



2. Jun va ipak tolalarini Venna diagrammasida taqqoslash.



Kichik guruhlar o'z diagrammalarini tuzib bo'lgach, yagona guruhga birlashib, diagrammalarni o'zaro taqqoslaydilar. Talabalar bir-birlarining diagrammalaridan qo'shimcha ma'lumotlar oladilar, barcha uchun umumiy bo'lgan grafik organayzerga hamma ma'lumotlarni kiritib fikrlarni to'ldiradilar.

«Venn» diagrammasining afzalliklari: grafik organayzer sifatida tizimli fikrlash, solishtirish, taqqoslash, tahlil qilish ko'nikmalarini rivojlantiradi. Uning yordamida o'tilgan mavzu yana bir bor takrorlanib, o'zlashtirilgan bilimlar talabalar yodida saqlanib qoladi. Uning yana bir afzalligi sifatida kam vaqt talab qilinishini aytib o'tish mumkin. U kichik guruhlarini shakllantirish asosida aniq sxema bo'yicha amalga oshiriladi.

«Venn» diagrammasining kamchiligi: diagrammaning kamchiligi shundaki, belgilangan aylana ichiga katta sig'imdagi ma'lumotni joylashtirishda qiyinchilik yuzaga keladi. Agar har bir keltirilgan ma'lumotning tartib raqami ko'rsatilmasa, o'xshash jihatlarni aylanalarning kesishgan qismida to'liq yozish shart. Ajratilgan joy esa (aylanalarning kesishidan hosil bo'lgan qismi) barcha ma'lumotlarni sig'dirish imkonini bermaydi.

Konseptual jadval - o'rganilayotgan hodisa, tushuncha, fikrlarni ikki va undan ortiq jihatlari bo'yicha taqqoslashni ta'minlaydi. Tizimli fikrlash, ma'lumotlarni tuzilmaga keltirish, tizimlashtirish ko'nikmalarini rivojlantiradi.

Konseptual jadval quyidagi bosqichlarni o'z ichiga oladi.

1. Konseptual jadvalni tuzish qoidasi bilan tanishadilar. Taqqoslanadiganlarni aniqlaydilar, olib boriladigan taqqoslanishlar bo'yicha, xususiyatlarni ajratadilar.

2. Alohida yoki kichik guruhlarda konseptual jadvalni to'ldiradilar.

- Uzunlik bo'yicha taqqoslanadigan (fikir, nazariyalar) joylashtiriladi;

- Yotig'i bo'yicha taqqoslanish bo'yicha olib boriladigan turli tavsiflar yoziladi.

3. Ish natijalarining taqdimoti.

Tabiiy tola turlari	Ta'riflar, toifalar, xususiyatlar				
	Tarkibi	Tuzilishi	Turlari	Rangi	Gazlama turi
Paxta	95-96% - sellyuloza 4-5% - moy, mum, bo'yoq, mineral modalar	Bitta o'simlik xujayrasidan iborat. Pishgan paxta tolasi spiralsimon, buralgan yassi naychalardan iborat, ko'nda-lang kesimi oval shklida bo'ladi.	1.Mutlaqo pishmagan o'lik tola; 2.Pishmagan tola; 3.Yaxshi pishmagan tola; 4.Pishgan tola; 5.Pishib ketgan tola.	Oq, biroz sariq	Chit, satin, batist, bayka, markizet, flannel, bumazey, bo'z, mitkal
Zig'ir	80% - sellyuloza 20% - moy, mum, bo'yoq, mineral modular va lignin	O'rtasida tor kanali va yo'g'onlashgan tirsaksimon joylari bor. Uchi o'tkir, kanali ikki tomondan berk, ko'ndalang kesimi 5-6 yoqli ko'pburchakdan iborat.	1.Elementar tola; 2.Texnik tola	Och kul-rang, to'q kul-rang	Choyshab, dasturxon, sochiq, ich kiyimlik, ko'ylak, kostyumlik bortovka, qotirmalik gazlamalar
Jun	Keratin	Tangachali, qobiq va o'zak qatlamlardan iborat.	1.Momiq tola; 2.Dag'al tuk; 3.Oraliq tola; 4.O'lik tola	Oq, sariq, jigar, qora, kul rang	Kamvol, movut, drap, boston, sheviot, krep, triko, gabardin, bukle, diagonal,
Ipak	75% - fibroin, 25% - seritsin	Parallel notekis seritsin qatlamidan iborat. Ko'ndalang kesimi duma-loq, ovalsimon, lentasimon.	Xom ipak	Oq, biroz sariq	Atlas, adras, olacha, banoras, krepdishin, krepjorjet, krepshifon, glad, jakkard, baxmal, duxoba

Konseptual jadval - talabalarda o'rganilgan ma'lumotlarni xususiyatlariga qarab taqqoslash, solishtirish va tizimli fikrlashga o'rgatadi.

Ta'lim jarayonida interfaol metod (strategiya, grafik organayzer)lar bilan ishlash talabalar tomonidan o'quv axborotlarini tizimli, yaxlit holda o'zlashtirish imkoniyatini yaratadi. Qolaversa, interfaol metodlar yordamida talabalar o'quv axborotlari bilan ishlashda bilimlarni tahlil qilish, sintezlash, muhim tushunchalarni

tizimlashtirish, ob'ekt, jarayon, faoliyat, voqea, hodisalarning umumiy mohiyatini aniq ifodalash kabi ko'nikma, malakalarni o'zlashtirishga muvaffaq bo'ladi.

XULOSA

Ta'kidlash joizki, bugungi kun ta'limida eng dolzarb bo'lgan texnologiya fani darslarida interfaol usullarni qo'llash o'quvchilarda bilimlarni faollashtirishni tezlashtiradi, fikrlash jarayoniga mavzu bo'yicha yangi o'zaro bog'lanishli tasavvurlarni erkin va ochiq jalb qilishga yordam beradi. Shuningdek, kasbiy bilim, ko'nikma va malakalarni rivojlantirib, kasbiy sifatlar hamda ma'naviy dunyoqarashni rivojlantiradi.

Foydalanilgan adabiyotlar

1. Muhidova, O. N. Methods and tools used in the teaching of technology to children // ISJ Theoretical & Applied Science, 04 (84), (2020), 957-960.
2. О.Н. Мухидова Компетентностный подход к развитию профессиональной деятельности учителя // Вестник науки и образования 97 (№ 19 (97).Часть 2), С 88-91
3. О.Н. Мухидова Электронное обучение в высшем образовании // Вестник магистратуры, 1-5 (100) 2020 С 43-44
4. Halimovna, K. S., Nurilloevna, M. O., Radzhabovna, K. D., Shavkatovna, R. G., Hamidovna The role of modern pedagogical technologies in the formation of students' communicative competence. // Religación. Revista De Ciencias Sociales Y Humanidades 4 No. 15 (2019): Special Issue May 261-265.
5. Uzokov O.Kh., Muhidova O.N. Factor determining the efficiency of innovative activities of a teacher // INTERNATIONAL JOURNAL OF DISCOURSE ON INNOVATION, INTEGRATION AND EDUCATION. Vol. 2 No. 1 (2021), 81-84
6. Muhidova Olima Nurilloevna. FORMING TECHNOLOGICAL COMPETENCE USING VISUAL TOOLS IN TECHNOLOGY LESSONS // ACADEMICIA: An International Multidisciplinary Research Journal. Vol. 11 Issue 1, January 2021, 852-855
7. Muhidova O.N. Development of creative abilities in technology lessons // INTERNATIONAL JOURNAL OF DISCOURSE ON INNOVATION, INTEGRATION AND EDUCATION. Vol. 2 No. 2 (2021), 119-122
8. Muhidova O.N., Alekseeva N.N. DEVELOPMENT OF STUDENTS CREATIVE ABILITIES IN TECHNOLOGY LESSONS // International journal for innovative engineering and management research. Vol 10 Issue 04, 2021, 188-191
9. Мухидова О.Н. ИННОВАЦИОННЫЕ ТЕХНОЛОГИИ В УЧЕБНОМ ПРОЦЕССЕ. INNOVATION IN THE MODERN EDUCATION SYSTEM. Washington, USA: "CESS", Part 2 January 2021, 88-93.

10. Muhidova O.N. DEVELOPMENT OF STUDENTS CREATIVE ABILITIES
2nd International Conference on Science Technology and Educational Practices
Hosted from Samsun, Turkey May 15th -16th 2021

11. Узаков О. Х., Муртазоев А. Н.У., Тошев Ю.Н. (2021). Физические научные понятие и их образования // *Academic research in educational sciences*, № (9), С. 210-218.

12. Узаков О.Х. (2021). Сущность некоторых физических научных концепций и приложений // *Общество и инновации*. № (8), С. 287-295.

13. Узаков О.Х. Сущность некоторых физических научных понятий и области их применения. *Oriental Renaissance: Innovative, educational, natural and social sciences Scientific Journal Impact Factor VOLUME 1 | ISSUE 8 pp.133-143*.

14. Uzakov. O.X. (2021). Innovative technologies and methods training in education. *ACADEMICIA: An International Multidisciplinary Research Journal Vol. 11, Issue 1, January pp.1304– 1308*.

15. Uzakov. O.X. Muxidova O.N. (2021). Factor determining the efficiency of innovative activities of a teacher. *International journal of discourse on innovation, integration and education 01 | January*.

16. Uzakov. O.X. (2020). Chaos as the basis of order. Entropy as measures of chaos. *International Journal of Advanced Academic Studies*, 2(2): 16149-16154.

17. Узаков О.Х. (2021). Философские рассуждение по научным понятиям. *Innovation in the modern education system. International scientific conference (25th September,)* – Washington, USA: "CESS", Part 10 pp.7– 14.

18. Узаков О.Х. (2021). Инновационные технологии и методы обучения в образовании. *Innovation in the modern education system. International scientific conference, (25th January, 2021)* – Washington, USA: "CESS", Part 1. pp.221-227.

19. Uzakov. O.X. (2021). Improving pedagogical skills throughout life learning. *International Vritual Conference On Innovative Thoughts, Research Ideas and Inventions in Sciences Hosted from Newyork, USA January 20 th*.

20. Uzakov. O.X. (2020). The emergence of chaos. *International Journal of Advanced Academic Studies*. 2 (2): 221-223.

21. Rasulova Z.D. (2020). Pedagogical peculiarities of developing socio-perceptive competence in learners. *European Journal of Research and Reflection in Educational Sciences*. 8:1, pp. 30-34.

22. Расулова З.Д. (2020). Дидактические основы развития у будущих учителей креативного мышления. *European science*, vol. 51, no. 2-2, pp. 65-68.

23. Расулова З.Д. (2018). Значения обучающих технологий направленной личности на уроках трудового обучения. *Ученые XXI века*, Т. 47, № 12, С. 34-35.

24. Rasulova Z.D. (2020). Conditions and opportunities of organizing independent creative works of students of the direction Technology in Higher

Education. *International Journal of Scientific and Technology Research*. 9:3, pp. 2552-2155.

25. Расулова З.Д. (2020). Эффективность дистанционной организации процессов обучения в высшем образовании. *Academy*. 62:11, С. 31-34.

26. Расулова З.Д. (2021). Технологии развития творческих способностей будущего учителя. *Наука, техника и образование*. 77:2-1, С. 34-37.

27. Расулова З.Д. (2021). Роль электронного учебно-методического комплекса в оптимизации учебных процессов. *Academy*. № 3 (66), С. 27-30.

28. Rasulova Z.D. (2014). On the spectrum of a three-particle model operator. *Journal of Mathematical Sciences: Advances and Applications*, 25, pp. 57-61.

29. Rasulova Z.D. (2014). Investigations of the essential spectrum of a model operator associated to a system of three particles on a lattice. *J. Pure and App. Math.: Adv. Appl.*, 11:1, pp. 37-41.

29. Rasulova Z.D. (2014). On the spectrum of a three-particle model operator. *Journal of Mathematical Sciences: Advances and Applications*, 25, pp. 57-61.

30. Расулова З.Д. (2021). Технологии развития творческих качеств студентов. *Наука и образования сегодня*. 60:1, С. 34-37.

References

1. Muhidova, O. N. Methods and tools used in the teaching of technology to children // *ISJ Theoretical & Applied Science*, 04 (84), (2020), 957-960.

2. O.N. Mukhidova Competence approach to the development of teacher's professional activity // *Bulletin of Science and Education* 97 (No. 19 (97). Part 2), pp. 88-91

3. O. N. Mukhidova E-learning in higher education // *Magistracy Bulletin*, 1-5 (100) 2020 С 43-44

4. Halimovna, K. S., Nurilloevna, M. O., Radzhabovna, K. D., Shavkatovna, R. G., Hamidovna The role of modern pedagogical technologies in the formation of students' communicative competence. // *Religación. Revista De Ciencias Sociales Y Humanidades* 4 No. 15 (2019): Special Issue May 261-265.

5. Uzokov O.Kh., Muhidova O.N. Factor determining the efficiency of innovative activities of a teacher // *INTERNATIONAL JOURNAL OF DISCOURSE ON INNOVATION, INTEGRATION AND EDUCATION*. Vol. 2 No. 1 (2021), 81-84

6. Muhidova Olima Nurilloevna. FORMING TECHNOLOGICAL COMPETENCE USING VISUAL TOOLS IN TECHNOLOGY LESSONS // *ACADEMICIA: An International Multidisciplinary Research Journal*. Vol. 11 Issue 1, January 2021, 852-855

7. Muhidova O.N. Development of creative abilities in technology lessons // INTERNATIONAL JOURNAL OF DISCOURSE ON INNOVATION, INTEGRATION AND EDUCATION. Vol. 2 No. 2 (2021), 119-122

8. Muhidova O.N., Alekseeva N.N. DEVELOPMENT OF STUDENTS CREATIVE ABILITIES IN TECHNOLOGY LESSONS // International journal for innovative engineering and management research. Vol 10 Issue 04, 2021, 188-191

9. Mukhidova O.N. INNOVATIVE TECHNOLOGIES IN THE EDUCATIONAL PROCESS. INNOVATION IN THE MODERN EDUCATION SYSTEM. Washington, USA: "CESS", Part 2 January 2021, 88-93.

10. Muhidova O.N. DEVELOPMENT OF STUDENTS CREATIVE ABILITIES 2nd International Conference on Science Technology and Educational Practices Hosted from Samsun, Turkey May 15th -16th 2021

11. Uzakov O. Kh., Murtazoev A. N.U., Toshev Yu.N. (2021). Physical scientific concept and their education // Academic research in educational sciences, № (9), pp. 210-218.

12. Uzakov O.Kh. (2021). The essence of some physical scientific concepts and applications // Society and innovations. No. (8), S. 287-295.

13. Uzakov O.Kh. The essence of some physical scientific concepts and their areas of application. Oriental Renaissance: Innovative, educational, natural and social sciences Scientific Journal Impact Factor VOLUME 1 | ISSUE 8 pp. 133-143.

14. Uzakov. O.X. (2021). Innovative technologies and methods training in education. ACADEMICIA: An International Multidisciplinary Research Journal Vol. 11, Issue 1, January pp. 1304–1308.

15. Uzakov. O.X. Muxidova O.N. (2021). Factor determining the efficiency of innovative activities of a teacher. International journal of discourse on innovation, integration and education 01 | January.

16. Uzakov. O.X. (2020). Chaos as the basis of order. Entropy as measures of chaos. International Journal of Advanced Academic Studies, 2 (2): 16149-16154.

17. Uzakov O.Kh. (2021). Philosophical reasoning according to scientific concepts. Innovation in the modern education system. International scientific conference (25th September,) - Washington, USA: "CESS", Part 10 pp.7-14.

18. Uzakov O.Kh. (2021). Innovative technologies and teaching methods in education. Innovation in the modern education system. International scientific conference, (25th January, 2021) - Washington, USA: "CESS", Part 1. pp. 221-227.

19. Uzakov. O.X. (2021). Improving pedagogical skills throughout life learning. International Virtual Conference On Innovative Thoughts, Research Ideas and Inventions in Sciences Hosted from Newyork, USA January 20 th.

20. Uzakov. O.X. (2020). The emergence of chaos. International Journal of Advanced Academic Studies. 2 (2): 221-223.

21. Rasulova Z.D. (2020). Pedagogical peculiarities of developing socio-perceptive competence in learners. *European Journal of Research and Reflection in Educational Sciences*. 8: 1, pp. 30-34.

22. Rasulova Z.D. (2020). Didactic foundations for the development of creative thinking in future teachers. *European science*, vol. 51, no. 2-2, pp. 65-68.

23. Rasulova Z.D. (2018). The values of teaching technologies of the directed personality in the lessons of labor education. *Scientists of the XXI century*, T. 47, No. 12, S. 34-35.

24. Rasulova Z.D. (2020). Conditions and opportunities of organizing independent creative works of students of the direction Technology in Higher Education. *International Journal of Scientific and Technology Research*. 9: 3, pp. 2552-2155.

25. Rasulova Z.D. (2020). The effectiveness of distance organization of learning processes in higher education. *Academy*. 62:11, pp. 31-34.

26. Rasulova Z.D. (2021). Technologies for the development of the creative abilities of the future teacher. *Science, technology and education*. 77: 2-1, S. 34-37.

27. Rasulova Z.D. (2021). The role of the electronic educational-methodical complex in the optimization of educational processes. *Academy*. No. 3 (66), pp. 27-30.

28. Rasulova Z.D. (2014). On the spectrum of a three-particle model operator. *Journal of Mathematical Sciences: Advances and Applications*, 25, pp. 57-61.

29. Rasulova Z.D. (2014). Investigations of the essential spectrum of a model operator associated to a system of three particles on a lattice. *J. Pure and App. Math. : Adv. Appl.*, 11: 1, pp. 37-41.

29. Rasulova Z.D. (2014). On the spectrum of a three-particle model operator. *Journal of Mathematical Sciences: Advances and Applications*, 25, pp. 57-61.

30. Rasulova Z.D. (2021). Technologies for the development of students' creative qualities. *Science and education today*. 60: 1, pp. 34-37.