

USE OF NEW PEDAGOGICAL TECHNOLOGIES IN TEACHING THE SUBJECTS OF INDUSTRIAL SANITATION AND LABOR HYGIENE

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Abstract

In this article, the possibilities of using new pedagogical technologies in the course of the lesson are highlighted on the example of topics of industrial sanitation and occupational hygiene. With the help of basic words and expressions related to science, the content and essence of the subject of science is revealed using "Cubic strategy", "Sinquevin", "Venn diagram" and "Cluster" as well as new pedagogical methods.

Keywords: Labor hygiene, teaching process, pedagogical technology, educational system, creative thinking, venn diagram, cluster, sinkvein, cubic strategy, interactive method.

Work is the basis of human formation and social development, creating material wealth. It is necessary for the normal course of biological processes in the organism and the performance of social functions. Properly organized work leads to social, intellectual and spiritual development of people. The characteristics of work and production conditions indicate that there are occupational damages in production that can adversely affect a person's ability to work or health. Taking into account the absence of the above cases, the use of various interactive methods in the subject of Industrial sanitation and occupational hygiene "Works to prevent occupational poisoning and occupational diseases" has been recognized by the international community of pedagogues as highly effective.

A.N. Nikitin, F.F. Erisman, D.P. Nikolsky and local scientists A.Z. Zoxidov, S.R. Dikhtyar, G.N. Nazirov, S.S. Sosnovki, N.I. Smetanin, N.M. Demidenko, T.I. Iskandarov, V.B. Danilov and S.S. Solikhohjhaev, R.D. Simonovich made a great contribution. According to them, the development of society is accompanied by the increasingly diverse division of labor, and a large number of professions appear in



all areas of human activity. This requires the acquisition of certain skills and knowledge to master this profession. These acquired skills and knowledge are considered to be a source of well-being, freshness and cheerfulness of the worker, as well as protection of the worker's work.

Active methods of teaching are methods that activate the learning process and ensure the student's creative participation in this process. The main content of this is the basis for the development of the student's character and ability based on individual participation. With this, it is possible not only to expand and deepen professional knowledge, but also to develop practical skills and competencies, based on the student's creative thinking, attention to independent study.

As a result of the use of pedagogical technologies created by mature pedagogic scientists in the educational processes of our independent republic, the spread of knowledge imparted to students has been significantly condensed, and it has given an opportunity to achieve educational results that meet the requirements of the world educational standard. "Brainstorm" of teaching recognized in world pedagogy, extensive use of information gathering and dissemination, syncway, clustering, text "insert" and "zig-zag" interactive methods serve to develop students' independent thinking skills. Technological approaches to teaching can be applied to almost all subjects, including Emergency Situations and Civil Protection. In this article, educational models on the topic "Works carried out in the enterprise in order to prevent occupational poisoning and occupational diseases" taught in the science of industrial sanitation and occupational hygiene are created, the specified goals are developed on the basis of "Bloom's taxonomy" and using the text of lectures on the topic, "Industrial dust", using the interactive methods of "Venn diagram", "Cubic strategy", "Cluster" and "Sinquain", the meaning and essence of the topic is revealed in the teaching process.

1. With the help of «Venn diagram», the signs or characteristics of 2 concepts that are unique and common to both are determined. Below is a Venn diagram for the concepts of "Industrial Dust" and "Industrial Poisons":

Basic concepts of the new topic	Common aspects	Comparison to previous topic
Production dust: 1. Types - organic dust, inorganic dust and mixed dust 2. Reasons for formation - breaking and crushing of hard rocks, breaking, transportation of scattered materials. 3. Ways of elimination - the student fills in	1. Occupational disease occurs. 2. Harms respiratory tract. 3. The amount of harmful substances in the air of the working area increases. 4. The use of personal protective equipment is required at the workplace. 5. The student finds commonalities.	Production poisons: 1. Types-nitrogen oxides, benzene, acetone, mercury, lead, sulfated carbon dioxide 2. Reasons - in the production of raw materials (benzene, aniline, chlorine), intermediate products (sulphide gas) and final products (sulfuric acid) in chemical plants 3. Ways of elimination – this is to be completed by the student.



Completing the Venn diagram can be used as a basis for teacher assessment of how much knowledge a student has about a new topic and how well he has mastered the topic. Because of the tragedies, only concepts related to the car are given, and the student is forced to think to fill in the rest by reading the filled-in part.

1. Use the cube strategy.

A) "Define". Production dust refers to solid small particles with a size ranging from several tens of micrometers to its fractions, which circulate in the air in the working area and slowly fall to the ground.

Depending on the formation, it is divided into disintegration and condensation dust. According to the origin of the dust, it is divided into organic, inorganic and mixed dust

B) "Compare". Industrial poisons are occupational or industrial poisonings that affect a person in working conditions and reduce work capacity or damage health.

V) "Association". Industrial dust is a process that usually exists in the work zone, and its impact on human health is inevitable sooner or later. Therefore, it is required to prepare in advance.

G) "Analysis" The occurrence or occurrence of production dust and production poisons differ from each other by their specific characteristics. Therefore, there are different ways to protect people from such disasters.

D) "Application". To take legal measures to prevent production dust, to fight against the formation and spread of dust and to provide workers with personal protective equipment.

In conclusion, it can be said that the selection of methods of new pedagogical technologies encouraging independent thinking as much as possible, on the basis of ensuring students' activity in the learning process, has a good effect. Even in order to repeat the previous lesson, to strengthen the new topic, it is possible to choose the right pedagogical technology methods, and it requires the teacher to be knowledgeable. Therefore, from the time of organizing each lesson, the teacher himself should make careful preparations, even knowing in advance the questions that the students may ask based on the theory of probability, and find a thorough answer to these questions.



References

- 1.Sadriddinovich, B. N., & Tukhtamirzaevich, M. A. (2022). DEVELOPMENT OF PRODUCTION OF BUILDING MATERIALS IN THE REPUBLIC OF UZBEKISTAN THROUGH INNOVATIVE ACTIVITIES. *Scientific Impulse*, 1(4), 213-219.
2. Ёқубжонова Ё F, Халимжонова У Б. КАСБДАН ЗАҲАРЛАНИШ ВА КАСБ КАСАЛЛИКЛАРИ МАВЗУСИНИ ЎҚИТИШДА ИНТЕРФАОЛ УСУЛЛАРДАН ФОЙДАЛАНИШ ИМКОНИЯТЛАРИ. //Science and innovation. –2022. –Т.1.– №. B104– С.532-537.
- 3.Бахриддинов, Н. С., Мамадалиев, Ш. М., & Ёқубжанова, Ё. (2022). ПРАКТИЧЕСКОЕ ЗНАЧЕНИЕ ОРГАНИЗАЦИИ ЭКОЛОГИЧЕСКОГО ОБРАЗОВАНИЯ В ДОШКОЛЬНОМ УЧРЕЖДЕНИИ. *Oriental renaissance: Innovative, educational, natural and social sciences*, 2(5), 443-448.
- 4.Mamadaliev, A. (2019). THEORETICAL SUBSTANTIATION OF PARAMETERS OF THE CUP-SHAPED COATING DRUMS. *Scienceweb academic papers collection*.
- 5.Mamadjanov, Z., Mamadaliev, A., Bakieva, X., & Sayfiddinov, O. (2022). СУЮҚ ЎҒИТАММИАКАТЛАР ОЛИШ ВА УЛАРНИ ИШЛАТИШ УСУЛЛАРИ. *Science and innovation*, 1(A7), 309-315.
- 6.Umarjonovna, D. D., & Gulomjonovna, Y. Y. (2022). CHALLENGES OF FOOD SECURITY. *Conferencea*, 505-507.
7. Yoqutxon, Y., & Go'zalbonu, R. (2022). A Change of Ecosystem, Education, Technology and Lifestyle. *International Journal of Formal Education*, 1(9), 84-89.
8. Бахриддинов, Н. С., Мамадалиев, Ш. М., & Джураева, Д. У. (2022). Современный Метод Защиты Озонового Слоя. *CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES*, 3(3), 1-4.
- 9.Мамадалиев, А. Т., & Бакиева, Х. А. СУЮҚ ЎҒИТ-АММИАКАТЛАР ОЛИШ ВА УЛАРНИ ИШЛАТИШ УСУЛЛАРИ Мамаджанов Зокиржон Нематжонович, PhD, доцент.
- 10.Ёқубжанова, Ё. Г. (2022). Использование Инновационных Технологий При Организации Занятий По Промышленной Санитарии И Гигиене. *Central Asian Journal of Literature, Philosophy and Culture*, 3(10), 25-27.
- 11.Yakutkhan, Y., & Khoshimjon o'gli, Y. S. (2022). Educate the Population on the Types and Causes of Emergencies. *Journal of Ethics and Diversity in International Communication*, 2(5), 22-26.

12. Mamadaliev, A., Mamadjonov, Z., Arislanov, A., & Isomiddinov, O. (2022). ҚИШЛОҚ ХҮЖАЛИГИДА УРУҒЛИК ЧИГИТЛАРНИ АЗОТ ФОСФОРЛИ ЎҒИТЛАР БИЛАН ҚОБИҚЛАШ. *Science and innovation*, 1(D5), 180-189.
13. No, P. (1998). 5698 UZ. Method of obtaining extraction phosphoric acid/Gafurov K., Shamshidinov IT, Arislanov A., Mamadaliev A.(UZ).
- 14.. Мамадалиев, А. Т. (2013). Институт механизации и электрификации сельского хозяйства, г. Янгийул, Республика Узбекистан. Редакционная коллегия, 174.
15. Пулатов, А. С., Сарибаева, Д. А., & Ёкубжанова, Ё. Г. (2014). Некоторые константы и содержание жирных кислот в бараньем курдючном жире. *Молодой ученый*, (20), 211-214.
16. Mashrabboyevich, M. S., & Gulomjonovna, Y. Y. (2022). Teaching Construction Ecology with New Pedagogical Technologies. *CENTRAL ASIAN JOURNAL OF THEORETICAL & APPLIED SCIENCES*, 3(5), 210-212
17. Shamshidinov, I. T., Mamadaliev, A. T., & Mamajanov, Z. N. (2014). Optimization of the process of decomposition of aluminosilicate of clays with sulfuric acid. In *The First International Conference on Eurasian scientific development* (pp. 270-275).
18. Шамшидинов, И. Т., Мамаджанов, З. Н., & Мамадалиев, А. Т. (2014). Изучение коагулирующей способности сульфата алюминия полученного из ангренского каолина. In *НАУКА XXI ВЕКА: ТЕОРИЯ, ПРАКТИКА, ПЕРСПЕКТИВЫ* (pp. 48-55).
19. Yoqutxon Y. et al. A Change of Ecosystem, Education, Technology and Lifestyle//International Journal of Formal Education.–2022.– Т.1.– №. 9.–С.84-89.
20. Tuxtamirzayevich, M. A. (2020). Study of pubescent seeds moving in a stream of water and mineral fertilizers. *International Journal on Integrated Education*, 3(12), 489-493.
21. Пулатов, А. С., Сарибаева, Д. А., Ёкубжанова, Ё. Г., & Дадамирзаев, М. Х. (2014). Основное значение пива в системе рационального питания. *Молодой ученый*, (2), 184
22. Бахриддинов, Н. С., & Тургунов, А. А. (2022). ЭКСТРАКЦИОН ФОСФАТ КИСЛОТА ОЛИШ ДАВРИДА ФИЛЬТРЛАШ ДАРАЖАСИННИ ОШИРИШ. *PRINCIPAL ISSUES OF SCIENTIFIC RESEARCH AND MODERN EDUCATION*, 1(8).



23. Rosaboev, A., & Mamadaliyev, A. (2019). Theoretical substantiation of parameters of the cup-shaped coating drums. International Journal of Advanced Research in Science, Engineering and Technology, 6(11), 11779-11783.
24. Мамадалиев, А. Т. (2021). Теоретическое обоснование параметров чашеобразного дражирующего барабана. Universum: технические науки, (6-1 (87)), 75-78.
- 25.Росабоев, А., & Мамадалиев, А. (2013). Предпосевная обработка опущенных семян хлопчатника защитно-питательной оболочкой, состоящей из композиции макро и микроудобрений. Теоретические и практические вопросы развития научной мысли в современной мире: Сборник статей. Уфа Риц БашГУ, 174-176.
26. Bakhridinov N S., Turgunov A A, Yakubzhanova Y G. Technology of obtaining magnesium and sulfate ion superphosphate from efk concentration waste. INTERNATIONAL SCIENTIFIC-PRACTICAL CONFERENCE ON "MODERN EDUCATION: PROBLEMS AND SOLUTIONS" Vol. 1 No. 5 (2022)
27. Гафуров, К., Росабоев, А., & Мамадалиев, А. (2007). Дражирование опущенных семян хлопчатника с минеральным удобрением. ФарПИ илмий-техник журнали.–Фарғона, (3), 55-59.
28. Пулатов А. С., Сарибаева Д. А., Ёкубжонова Ё. Изменение содержания азотистых веществ мяса при тепловой обработке //Молодой ученый. – 2016. – №. 3. – С. 194-196
- 29.Tuxtamirzaevich, M. A. (2021). Presowing Treatment of Pubescent Cotton Seeds with a Protective and Nutritious Shell, Consisting of Mineral Fertilizers in an Aqueous Solution and a Composition of Microelements. Design Engineering, 7046-7052.
- 30.Росабоев, А. Т., & Мамадалиев, А. Т. (2017). Теоретическое обоснование движения опущенных семян хлопчатника после поступления из распределителяв процессе капсулирования. Science Time, (5), 239-245.
- 31.Mamadaliyev, A. T. (2021). son Bakhtiyor Maqsud, Umarov Isroil. Study of the movement of pubescent seed s in the flow of an aqueous solution of mineral fertilizers. A Peer Reviewed Open Access International Journal, 10(06), 247-252.
- 32.Мамадалиев, А.Т., & Мамаджанов, З. Н. (2022). Минерал ўғитлар ва микроэлементли композицияларни сувдаги эритмаси билан қобиқланган тукли чигитларни лаборатория-дала шароитида синаш натижалари. Экономика и социум, (2), 93.



- 33.Мамадалиев, А. Т. (2022). Уруғлик чигитларни макро ва микроўғитлар билан қобиқловчи қурилманинг ўлчамлари ва иш режимларини асослаш. In МИРОВАЯ НАУКА 2022. ПРОБЛЕМЫ И ПЕРСПЕКТИВЫ РАЗВИТИЯ. МЕЖДУНАРОДНЫЕ КОММУНИКАЦИИ (pp. 54-57).
34. Mamadaliev, A. (2002). УРУГЛИК ЧИГИТЛАРНИ МАКРО ВА МИКРОЎҒИТЛАР КОМПОЗИЦИЯЛАРИ БИЛАН ҚОБИҚЛАШ ТЕХНОЛОГИЯСИ ВА ҚУРИЛМАЛАРИ. Scienceweb academic papers collection.
- 35.Mamadaliev, A. ТУКЛИ ЧИГИТЛАРНИ МИНЕРАЛ ЎЕЙТЛАР БИЛАН^ ОБЩЛОВЧИ^ УРИЛМАНИНГ КОНУССИМОН ЁЙГИЧИ ПАРАМЕТРЛАРИНИ АСОСЛАШ. Scienceweb academic papers collection-2014.
- 36.Mamadaliev, A. ТУКЛИ ЧИГИТЛАРНИ^ ОБЩЛАШ БАРАБАНИНИНГ ПАРАМЕТРЛАРИНИ НАЗАРИЙ АСОСЛАШ. Scienceweb academic papers collection.-2012.
- 37.Mamadaliev, A. (2014). ТУКЛИ ЧИГИТЛАРНИ МИНЕРАЛ ЎҒИТЛАР БИЛАН ҚОБИҚЛОВЧИ ҚУРИЛМАНИНГ КОНУССИМОН ЁЙГИЧИ ПАРАМЕТРЛАРИНИ АСОСЛАШ. Scienceweb academic papers collection.
- 38.Mamadaliev, A. (2003). ҚИШЛОҚ ХЎЖАЛИК ЭКИНЛАРИ УРУГЛАРИНИНГ ЮЗИНИ ХИМОЯ-ОЗУҚА ҚОБИГИ БИЛАН ҚОПЛАШ УСУЛИ ВА УНИ АМАЛГА ОШИРИШ УЧУН ҚУРИЛМА. Scienceweb academic papers collection.
39. Arislanov, A., Abdullaev, M., Mamadaliev, A., Mamadjonov, Z., & Isomiddinov, O.(2022). ПАХТА ҲОСИЛДОРЛИГИНИ ОШИРИШДА УРУГЛИК ЧИГИТЛАРНИ МИНЕРАЛ ЎҒИТЛАР БИЛАН ҚОБИҚЛАШ ВА ЭЛЕКТРОКИМЁВИЙ ФАОЛ-ЛАШГАН СУВ БИЛАН ИВИТИБ ЭКИШ. Science and innovation, 1(D5), 171-179.
- 40.Ризаев, Б. Ш., Мамадалиев, А. Т., Мухторалиева, М. А., & Назирова, М. Х. (2022). Эффективные легкие бетоны на их основе пористых заполнителей. In Современные тенденции развития науки и мирового сообщества в эпоху цифровизации (pp121-125).
41. Абдуллаев, М. Т., & Мамадалиев, А. Т. (2022). Изучение эффективности дражирования семян хлопчатника в водном растворе минеральных удобрений и композиции микроэлементов.«. Экономика и социум, (1), 92.



- 42.Бахриддинов, Н. С. (2017). ЖИДКИЕ КОМПЛЕКСНЫЕ УДОБРЕНИЯ НА ОСНОВЕ ЭКСТРАКЦИОННОЙ ФОСФОРНОЙ КИСЛОТЫ. *Science Time*, (5 (41)), 177-180.
43. Rizaev, B., Mamadaliyev, A., & Mamasodiqov, Q. (2022). NATURAL CLIMATE OF DRY HOT CLIMATE AREAS AND ITS EFFECT ON BUILDING MATERIALS. *Science and innovation*, 1(A8), 72-78.
44. Shamsitdinovich, R. B., & Tukhtamirzaevich, M. A. (2022). DEFORMABILITY OF REINFORCED CONCRETE COLUMNS MADE OF HEAVY CONCRETE IN NATURAL CONDITIONS OF THE REPUBLIC OF UZBEKISTAN. *PEDAGOGICAL SCIENCES AND TEACHING METHODS*, 2(17), 12-18.
45. Shamsitdinovich, R. B., Tukhtamirzaevich, M. A., & QobiljonAbduqahhor oglı, M. (2022). MODERN COMPOSITE REINFORCEMENTS. *PRINCIPAL ISSUES OF SCIENTIFIC RESEARCH AND MODERN EDUCATION*, 1(8).
46. Намазов Ш.С., Бахриддинов Н .С., Эркаев А .У ., Абдуллаев Б.Д. Физико-химические свойства упаренной экстракционной фосфорной кислоты из фосфоритов Центральных Кызылкумов //Узб. хим.журн. - 1991. - №1.-С.25-28.
47. Бахриддинов НС,Эркаев А.У Намазов Ш.С,Абдуллаев Б.Д.Экстракционная фосфорная кислота из фосфоритов Центральных Кызылкумов. Узб.хим.журн.1991 г №2. с 65-67
48. Бахриддинов НС , Эркаев А.У Намазов Ш.С Абдуллаев Б.Д Аммонизация упаренной ЭФК из фосфоритов Центральных Кызылкумов . Узб.хим.журн. 1991 г. №3С.3-6
49. Бахриддинов Н.С., Абдуллаев Б.Д., Эркаев А.У., Намазов Ш.С. Концентрированная экстракционная фосфорная кислота из фосфоритов Центральных Кызылкумов и ее физико-химические свойства // Узб.хим.журн. -1991. -№1. -С.21-25.
50. Бахриддинов, Н. С. (2022). ЧИҚИНДИДАН ФОЙДАЛАНИБ МАГНИЙ ВА СУЛЬФАТ ИОНЛИ ОДДИЙ СУПЕРФОСФАТ ОЛИШ ТЕХНОЛОГИЯСИ. *PRINCIPAL ISSUES OF SCIENTIFIC RESEARCH AND MODERN EDUCATION*, 1(8).
51. Sadriddinovich, B. N., & Axmadjanovich, T. A. (2021). Role Of Mahalla's Participation In The Development Of Education. *International Journal of Progressive Sciences and Technologies*, 25(1), 375-378



52. Baxriddinov, N., Mamadaliev, S., & Djuraeva, D. (2022). ОЛИЙ ТАЪЛИМ МУАССАСАЛАРИДА ЭКОЛОГИЯДАН ЎҚУВ МАШФУЛОТЛАРИНИ ТАШКИЛ ЭТИШ. *Science and innovation*, 1(B8), 10-15.
53. Бахриддинов, Н. С. Получения жидких комплексных удобрений на основе экстракционной фосфорной кислоты из фосфоритов Центральных Кызылкумов. Канд диссертация, 1991.
54. Пулатов А. С., Ёкубжанова Ё. Г., Сарибаева Д. А. Влияние тепловой обработки на пищевую и биологическую ценность баранины при приготовлении узбекских национальных блюд //Современные научные исследования и инновации. – 2015. – №. 7-2. – С. 11-13.

