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ATOM FIZIKASIDAN MUSTAQIL TA'LIMNI ONLAYN SHAKLDA TASHKIL ETISH

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Annotatsiya:
Ushbu maqolada atom fizikasi fanini o'qitishda mustaqil ta'limni bu fanning o'ziga xos jihatlarini hisobga olgan holda innovatsion texnologiyalar asosida tashkil etish metodikasi bayon etiladi.

Kalit so'zlar: LearningApps, "Millioner bo'lishni xoxlaysizmi", "To'g'ri ma'lumotni hosil qiling", "Bo'shliqni to'g'ri to'ldiring", "So'z hosil qiling", "Juftlik hosil qiling".

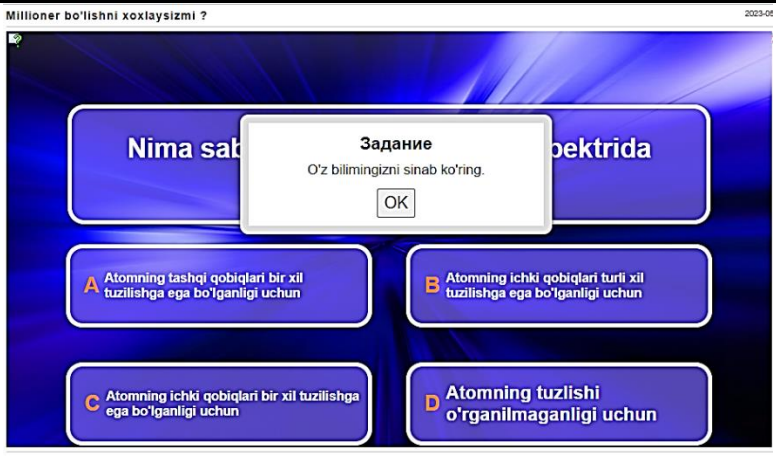
Hozirgi kunda mamlakatimiz oliy ta'lim muassasalarida qabul qilingan kredit-modul tizimi bo'yicha o'quv yuklamasining 50-60 % i mustaqil ta'limni tashkil etadi. Bu holat bo'lajak fizika o'qituvchilarini tayyorlovchi pedagogika oliy ta'lim muassasalarida mustaqil ta'limnin tashkil etishning zamonaviy texnologiyalarni joriy etish mexanizmini ishlab chiqishni taqozo etadi.

Ushbu maqolada atom fizikasi fanini o'qitishda mustaqil ta'limni bu fanning o'ziga xos jihatlarini hisobga olgan holda innovatsion texnologiyalar asosida tashkil etish metodikasi bayon etiladi.

Talabalarning mustaqil ta'lim mashg'ulotlarini mashg'ulot davomida va mashg'ulotdan tashqari tashkil etish mumkin. Mashg'ulot davomida tashkil etiladigan mustaqil ta'lim mashg'uloti o'qituvchi ishtiroki bilan amalga oshiriladi. Bunda o'qituvchi nazariy, amaliy, laboratoriya mashg'ulotlarida mavzuning hajmidan, murakkablik darajasidan hamda audirotiya tayyorgarligidan kelib chiqib amalga oshiradi. Nazariy mashg'ulotda o'zlashtirilishi qiyin bo'lgan mavzuning qismlari talabalarga mustaqil o'rganib kelish, yangi ma'lumotlarni izlab topish va uni talabalarga yetkazib berish uchun o'qitish metodlarini qo'llagan holda bir soatlik mashg'ulot ishlanmasini tayyorlash hamda besh daqiqalik seminar o'tkazish vazifasi beriladi.

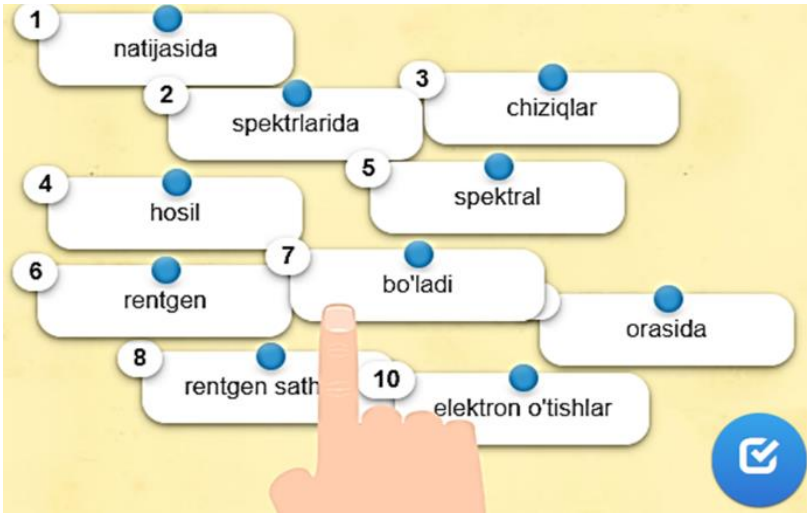
Yadro fizikasi bo'limini o'qitish jarayonida talabalarning mustaqil ta'limini auditoriyadan tashqarida Learningapps (**LearningApps.org**- multimedia interaktiv mashqlarni yaratish) masofaviy kursini tashkil etish orqali amalga oshirildi. Bunda talabalarning evristik, kreativlik kabi qobilyatlarini rivovlantirishda yangi ta'lim texnologiyalarini yadro fizikasi bo'limiga adaptiv yo'naltirishda bir qancha online metodlar yaratildi. Bu jarayonda vazifani to'g'ri bajarganligini bilish uchun o'z-o'zini tekshirish imkoniyati mavjud. Metodlarning bir nechatasi bilan tanishib chiqamiz.

"Millioner bo'lishni xoxlaysizmi" metodi nafaqat, offlayn mashg'ulotlarda qolaversa, masofadan olib boriladigan mashg'ulotlarda ham talabalarga o'tilgan darslarni takrorlash hamda yangi mavzuni mustahkamlash uchun yordam beradigan qiziqarli metod hisoblanadi. Bunda talabalarga pul miqdoriga mos keladigan qiyinchilikdagi savollardan foydalaniladi. Ya'ni qiyinroq savollarga javob berish orqali talabalar ko'p miqdordagi jamg'armaga ega bo'lishadi. Ushbu jamg'armaning miqdori talabaning mavzuni o'zlashtirish darajasini belgilovchi mezon bo'lib xizmat qiladi (1-rasm).



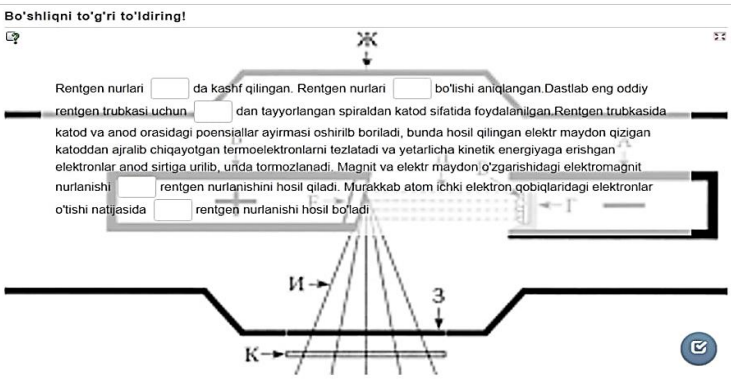
1-rasm. Atomning spektral seriyalari mavzusidagi millioner bo‘lishni xoxlaysanmi metodi

“To‘g‘ri ma’lumotni hosil qiling” metodida talabalar aniq ma’lumotni ifodalovchi so‘zlarni aralash holidan to‘g‘ri holatga keltirishi talab qilinadi. O‘tilgan mavzuga doir bir qator ma’lumotlarni to‘g‘ri tuzish orqali talabalarning tanqidiy, analitik, mantiqiy fikrlashlarini va qisqa vaqtda to‘g‘ri qaror qabul qilish qobilyatlarini rivojlantirishga xizmat qiladi (2-rasm).



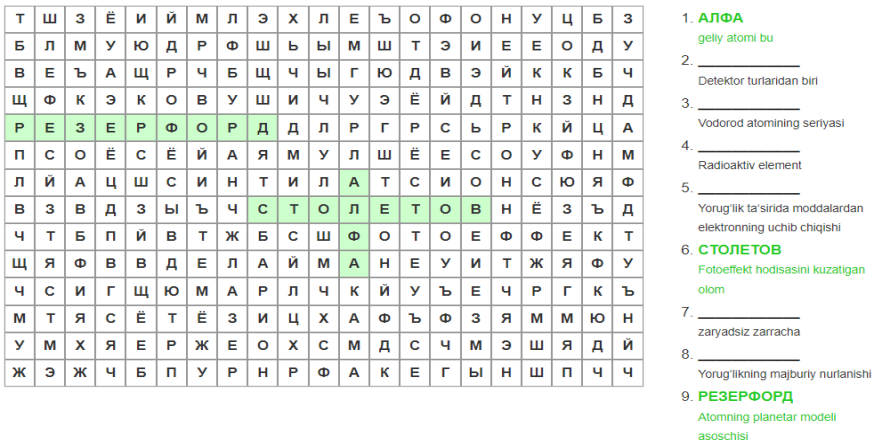
2 -rasm. Rentgen nurlanish mavzusidagi to‘g‘ri ma’lumotni hosil qiling metodi

“Bo‘shliqni to‘g‘ri to‘ldiring” metodida talabalar keltirilgan matndagi bo‘shliqlarga mos keluvchi so‘zlarni to‘g‘ri tanlashlari lozim bo‘ladi. Yangi mavzuga doir berilgan so‘zlar orasidan moslarini tanlab to‘g‘ri matnni hosil qilish talab etiladi. Talabalar hosil bo‘lgan to‘g‘ri matnni o‘qishlari orqali mavzu yana mustahkamlanadi (3-rasm).



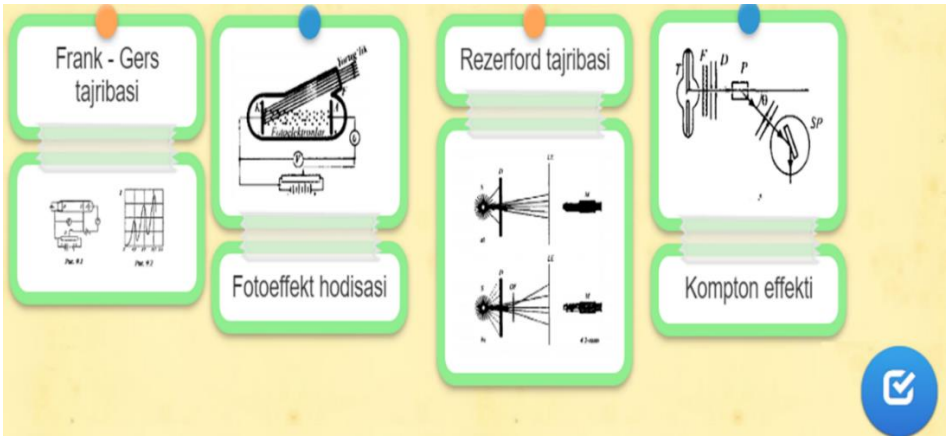
3-rasm. Rentgen nurlanish mavzusidagi bo‘shliqni to‘g‘ri to‘ldiring metodi

“So‘z hosil qiling” metodida quyidagi 4-rasmdagi jadval ko‘rinishida so‘zlar yashirib qo‘yilgan. Bunda talaba yangi mavzuda berilgan asosiy so‘zlarni savollarga javob berish orqali qidiradi. Javob so‘z vertikal yoki gorizontal holatda yashiringan bo‘lishi mumkin.



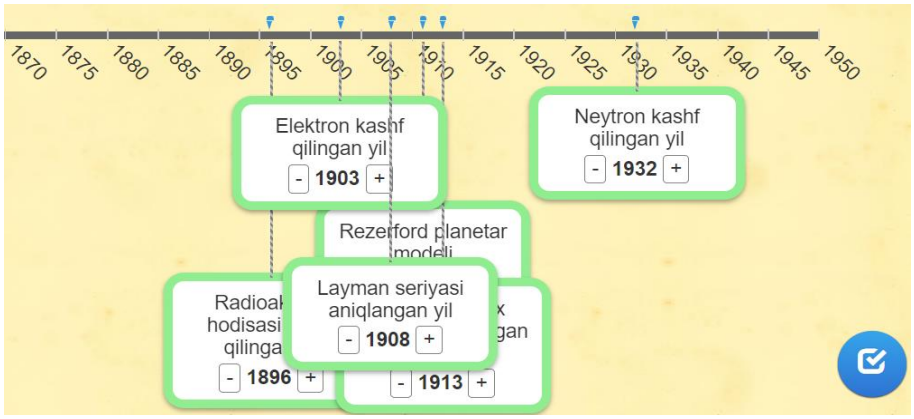
4-rasm. Jadvaldagi harflarni birlashtirib so‘z hosil qiling (So‘zni top (learningapps.org) metodi

“**Juftlik hosil qiling**” metodida savolga mos javobni bir-biriga moslashtirish zarur. Quyidagi 5-rasmda tajribalar va unga mos sxemalar keltirilgan bo‘lib, talaba bu ikkalasini bir-biriga juftlashtirish kerak.



5-rasm. Atom va yadro tuzilishiga oid tajribalar va ularning sxemasidan juftlik hosil qiling (https://learningapps.org/watch?v=pnrjnyq7323) metodi

“Kashfiyotlar tarixi” metodida yillar gorizontal o‘qga yozilgan holda qo‘yiladi. Berilgan har bir savolning javobi yillarga mos tushishi kerak. Quyidagi 6-rasmdagi metod talabalarning o‘tilgan mavzuga oid tarixiy ma’lumotlarni mustahkamlash uchun zamin yaratadi.



6-rasm. Atom yadrosiga oid kashfiyotlar tarixi (https://learningapps.org/watch?v=pgt5v1c6a23) metodi

Yuqorida keltirilgan onlayn metodlar asosida mustaqil ta'limda mustahkamlash, o'z-o'zini tekshirish va talabalar bilimini baholash maqsadlarda foydalanish ta'lim samaradorligini oshirish omillaridan biri hisoblanadi.

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