

Matematikani o'qitishda interfaol metodlar: "Keys-stadi" metodi

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Annotatsiya: Yangi pedagogik texnologiya ta'limning, xususan, Matematika ta'limining ma'lum maqsadga yo'naltirilgan shakli, usuli va vositalarining mahsulidir. Kuzatuvlar shuni ko'rsatadiki, aksariyat hollarda o'qituvchi dars jarayonida faqat o'zi ishlaydi, talabalar esa kuzatuvchi bo'lib qolaveradilar. Mazkur ishda Matematika ta'limini hayot bilan bog'lashni, talabalarning fikrlash qobiliyatini o'stirish, o'qitish samaradorligini oshirish uchun ta'lim metodlaridan biri "Keys-stadi" metodi haqida so'z yuritilgan, unga doir misollar keltirilgan va matematika faniga oid keys turlari haqida so'z yuritilgan.

Kalit so'zlar: Yangi pedagogik texnologiya, "Keys-stadi" metodi, keysning turlari, DTS va namunaviy o'quv dastur, ishchi o'quv dastur, elektron ta'lim resurslari

Interactive methods in teaching mathematics: Case study method

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Abstract: New pedagogical technologies are the product of purposeful forms, methods and tools of education, in particular, mathematics education. Observations show that in most cases, the teacher works alone during the lesson, and the students remain observers. In this work, one of the teaching methods to connect the teaching of mathematics with life, to develop students' thinking skills, to increase the effectiveness of teaching is the "Case-study" method, examples of which are given and related to the science of mathematics. types of cases.

Keywords: New pedagogical technology, case-study method, types of cases, SST and model curriculum, working curriculum, e-learning resources

Bugungi kunda yurtimizda Matematika ta'limi va ilm-fanini rivojlantirish bo'yicha olib borilayotgan keng ko'lamlı islohotlar, Matematika ta'lim mazmunini takomillashtirishga oid qabul qilingan hukumat qarorlari, Matematika ta'limni hayot bilan bog'lashni, o'qitish samaradorligini oshirishni, tez taraqqiy etib borayotgan

jamiyat uchun har tomonlama rivojlangan barkamol avlodni tarbiyalab etishtirishni talab qiladi. Shu o'rinda Matematika ta'limi jarayoniga yangi pedagogik texnologiyalarning kirib kelishi va qo'llanishi davr talabi bilan bevosita bog'liqdir.

Yangi pedagogik texnologiya ta'limning, xususan, Matematika ta'limining ma'lum maqsadga yo'naltirilgan shakli, usuli va vositalarining mahsulidir. Kuzatuvlar shuni ko'rsatadiki, aksariyat hollarda o'qituvchi dars jarayonida faqat o'zi ishlaydi, talabalar esa kuzatuvchi bo'lib qolaveradilar. Ta'limning bunday ko'rinishi talabalarning aqliy tafakkurini o'stirmaydi, faolligini oshirmaydi, ta'lim jarayonidagi ijodiy faoliyatini so'ndiradi. Shuningdek, ilg'or pedagogik texnologiya asosida tashkil etilgan darslar [1-8] o'quvchilarni bilimlarining yaxlit o'zlashtirilishiga yordam beradi, talaba tafakkurini o'stiradi, mustaqil, ijodiy fikrlashga o'rgatadi. Zero, barkamol avlod tarbiyasi jamiyat madaniy-ma'rifiy taraqqiyotining, millat ma'naviy kamolotining muhim belgisidir. Mazkur ishda Matematik analiz fani misolida "Keys-stadi" metodining mazmun-mohiyatini ochib berishga harakat qilamiz.

"Keys-stadi" - inglizcha so'zdan olingan bo'lib, («case» – aniq vaziyat, hodisa, «study» - o'rganmoq, tahlil qilmoq) aniq vaziyatlarni o'rganish, tahlil qilish asosida o'qitishni amalga oshirishga qaratilgan metod hisoblanadi.

Keys stadi metodining mohiyati shundan iboratki, unda ishtirokchilarga haqiqiy hayotiy vaziyat bo'yicha fikr yuritish taklif qilinib, bu vaziyat bayonida nafaqat amaliy masala ifodalanib qolmasdan, undagi muammoni yechish jarayonida o'zlashtirilishi zarur bo'lgan o'quv material ham ifodalanadi. Vaziyatning bunday usulidagi tahlili, talabaning bo'lajak kasbiy faoliyati tajribasini oldindan egallashga ham kuchli ta'sir ko'rsatadi, o'qishga nisbatan qiziqish va motivlarning vujudga kelishiga asos bo'lib hisoblanadi.

Bugungi kunda ommalashib borayotgan "Keys-stadi" metodining keys topshiriqlarini tuzishning matematika fanidagi turlariga to'xtalamiz. Ular quyidagilarga bo'linadi:

- 1) Amaliy keyslar;
- 2) O'rgatuvchi keyslar;
- 3) Ilmiy tadqiqot keyslari.

Matematika sohasida qo'llaniladigan keyslarning tuzilish tarkibi:

Keys turlari	Matematik keyslarning tuzilishi	
	Keysning mazmuni	Keys topshiriqlarining qisqacha bayoni
<i>Amaliy</i>	Matematik bilimlarni tadbiq qiladigan hayotiy vaziyatlar	Keys modelining to'liq mazmuni va modeli shakllantiriladi. Bu holatda optimal variantni topish uchun alternativ holatlarni qo'shish mumkin
<i>Ta'limiy (o'rgatuvchi)</i>	Matematika fani sohasidagi o'quv jarayon vaziyatlari	Keys topshirig'i mazmuni bayon qilinadi. Bunda muammo ichidagi yani

		qism muammolar keltiriladi. Bunday masalalarni yechish matematika fanining biror bo'limi doirasida keys topshiriqlari tuzib bajariladi.
<i>Ilmiy tadqiqot</i>	Matematik modellar tuzish va ularni tadqiq qilish, interpretatsiya qilish, ishlatish mumkin bo'lgan ilmiy izlanish jarayonlari	Keys topshiriqlari ayrim ma'lumotlarning to'la bo'lmagan, ma'lumotlari asosida beriladi. Matematik modellar bir qancha holatlar uchun matematik belgilar va tushunchalar orqali tuzilib, bular yordamida matematikaning bir qancha bo'limlaridagi masalalarni keys - stadi metodi bilan yechish mumkin bo'ladi.

Mavzu: Aniqmas integralda integrallash usullari

Keysning asosiy maqsadi: "Matematik analiz" fanini o'qitishning nazariy va amaliy masalalarini "Aniqmas integralda integrallash usullari" mavzusi misolida elektron o'quv moduli ishlanmasini shakllantirish hamda o'qitishni takomillashtirish bo'yicha xulosalar va tasiyalar ishlab chiqishdan iborat.

O'quv faoliyatidan kutiladigan natijalar:

- Talabalarda aniqmas integral haqida bilimlar hosil qilish.
- Talabalarda aniqmas integralda integrallash usullari bo'yicha ko'nikma hosil qilish.
- Axborot kommunikatsion texnologiyalari yordamida o'quv mashg'ulotlarini tashkil etish.

Ushbu keysni muvaffaqiyatli amalga oshirish uchun oldindan talabalar quyidagi bilim va ko'nikmalarga ega bo'lishlari zarur:

Talaba bilishi kerak: Funksiyalar haqida tushuncha. funksiya hosilasi, funksiyaning differensial.

Talaba amalga oshirishi kerak: mavzuni mustaqil o'rganadi; muammoning mohiyatini aniqlashtiradi; g'oyalarni ilgari suradi; ma'lumotlarni tanqidiy nuqtai nazardan ko'rib chiqib, mustaqil qaror qabul qilishni o'rganadi; o'z nuqtai nazariga ega bo'lib, mantiqiy xulosa chiqaradi; o'quv ma'lumotlar bilan mustaqil ishlaydi; ma'lumotlarni taqqoslaydi, tahlil qiladi va umumlashtiradi;

Talaba ega bo'lishi kerak: kommunikativ ko'nikmalarga; taqdimot ko'nikmalariga; hamkorlikdagi ishlar ko'nikmalariga; muammoli holatlarni tahlil qilish ko'nikmalariga.

Keys obyekt - bakalavriat ta'lim yo'nalishi 1-bosqich talabalari.

Axborot manbalari:

- ◆ 5130100 - "Matematika" bakalavriat ta'lim yo'nalishi DTS va namunaviy o'quv dasturi;

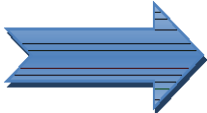
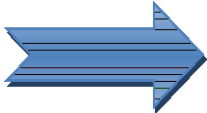
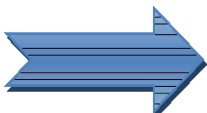
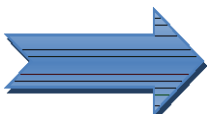
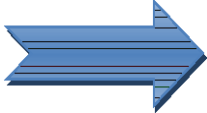
- ◆ Matematik analiz fani bo'yicha ishlab chiqarilgan fan moduli;
- ◆ Maxsus adabiyotlar, elektron ta'lim resurslari, ishchi o'quv dasturlar va boshqalar;

KEYS SAVOLLARI

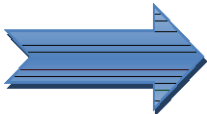
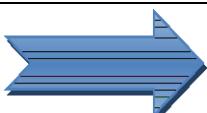
- O'zgaruvchini almashtirib integrallashning mohiyati;
- Bo'laklab integrallash qanday holda maqsadga muvofiq;
- Noto'g'ri kasr ratsional funktsiyani integrallash, to'g'ri ratsional funktsiyani integrallash;
- Sodda kasr ratsional funktsiyalar qanday integrallanadi;
- Irratsional funktsiyalar qanday integrallanadi;
- Ishni bajarish uchun ketgan vaqt (minut).

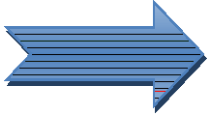

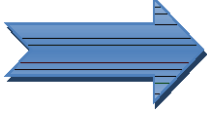
KEYS TOPSHIRIQLARI

I variant

	1.	Keys topshirig'i: Qanday hollarda trigonometrik funktsiyalar ratsionallashadi?
	2.	Keys topshirig'i: $\int \sqrt{x} \cdot \ln^2 x \, dx$
	3.	Keys topshirig'i: $\int \frac{dx}{\sqrt{1 - 2x - x^2}}$
	4.	Keys topshirig'i: $\int \frac{x^3 + 2x^2 + 3x + 4}{x^4 + x^3 + 2x^2} dx$
	5.	Keys topshirig'i: $\int \cos^5 2x \cdot \sin^7 2x \, dx$

II variant

	1.	Keys topshirig'i: Qanday hollarda trigonometrik funktsiyalarning tartibini pasaytirish bilan integrallanadi?
	2.	Keys topshirig'i:

		$\int x \ln \frac{1+x}{1-x} dx$
	3.	Keys topshirig'i: $\int \frac{x^3 dx}{x^4 - x^2 + 2}$
	4.	Keys topshirig'i: $\int \frac{(x^4 + 1)dx}{(x-1)(x^4 - 1)}$
	5.	Keys topshirig'i: $\int \frac{dx}{\sin^3 x \cos^5 x}$

Maqolada keltirilgan texnologiya yordamida darslarni samarali tashkil qilish mumkin [1-30]. O'quv mashg'uloti davomida o'quvchilarning qiziqishlarini orttirish maqsadida turli zamonaviy pedagogik texnologiyalardan foydalanish tavsiya etiladi. Zamonaviy ta'lim texnologiyalaridan foydalanish o'quvchilarning nafaqat fanga bo'lgan qiziqishlarini oshiradib balki ularning chuqur bilim va ko'nikmalarga ega bo'lishlariga xizmat qiladi.

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