



PEDAGOGLARGA DASTURLASH TILINI O'QITISHDA INTERFAOL USULLARDAN FOYDALANISH

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ANNOTATSIYA

Maqolada ta'limda interfaol metodlarni qo'llashning ahamiyati. Kattalar ta'limining asosiy metodlari va pedagoglarga python dasturlash tilini o'qitishda qo'llaniladigan "sinonim kodlar" metodi haqida ma'lumotlar keltirilgan.

Kalit so'zlar: Andragogika, intefaol metodlar, python, sinonim kodlar.

ABSTRACT

This article discusses the importance of using interactive teaching methods. It provides information on the basic adult learning and synonymous codes method used by educators to teach the Python programming language.

Keywords: andragogy, interactive methods, pyton, synonymous codes.

Bugungi kunda pedagog kadrlarni o'z ustida ishlashlari va tajriba almashishlari uchun keng imkoniyatlar yaratib berilgan. Jumladan, prezidentimiz Sh. Mirziyoyevning PQ-4884-son "Ta'lim-tarbiya tizimini yanada takomillashtirishga oid qo'simcha chora-tadbirlar to'g'risida"gi qarorida: "Xalq ta'limi xodimlarining malakasini oshirish jarayonini "hayot davomida o'qish" tamoyili asosida uzluksiz malaka oshirishni nazarda tutuvchi tizimga aylantirish" aytib o'tildi[1].

Malaka oshirish jarayonida informatika va axborot texnologiyalari fani o'qituvchilarining dasturlash bo'yicha bilim, ko'nikma va malakalarini shakllantirishda andragogik yondashuv talab qilinadi. Darsda beriladigan ma'lumotni sifatli o'zlashtirilishini ta'limlash maqsadida, kattalar ta'limiga mos keluvchi va shu bilan birga aynan dasturlash tilini o'rgatishga qaratilgan interfaol metodlarni ishlab chiqish va mavzuga mos qo'llash ta'lim sifatini oshirishda muhim omil hisoblanadi.

Pedagogikada interaktiv metodlar quyidagicha ta'riflanadi: Bilish va kommunikativ faoliyatni tashkil etishning maxsus shakli bo'lib, unda ta'lim oluvchilar bilish jarayoniga jalb qilingan bo'ladilar, ular biladigan va o'ylayotgan narsalarni tushunish va fikrlash imkoniyatiga ega bo'ladilar. Interfaol darslarda o'qituvchining o'zni qisman o'quvchilarning faoliyatini dars maqsadlariga erishishga yo'naltirishga qilib keladi[2,11].



ADABIYOTLAR TAHLILI VA METODOLOGIYA

Pedagogikaning asosiy maqsadlaridan biri, ta'lim oluvchilarga ularni shaxs sifatida bilish va o'z-o'zini anglashda zarur yordam ko'rsatishdan iborat.[3,190] Interfaol metodlar diqqatni jamlash, xotirani mustahkamlash, tarbiylash bilan birga ijodkorlik, kreativlik, tanqidiy fikrlashni rivojlantiradi. Dars jarayoni shunday tashkil qilinadiki, unda ta'lim oluvchilar o'zaro muloqot qilishni va birgalikda harakat qilishni o'rganishadi. Turli xil muammoli vaziyatni hamkorlikda hal qilish orqali tanqidiy fikrlash va jamoa bo'lib harakatlanishni, mavjud ma'lumotlarni birga tahlil qilishni o'rganishadi. Kattalar ta'limida qo'llaniladigan interfaol metodlar ularning yosh xususiyati va tajribasini hisobga olib tanlanishi kerak bo'ladi.

A.I.Kukuyevning fikriga ko'ra, tajriba tahlili - andragogik yondashuvning asosiy metodi bo'lib hisoblanadi[4].C:

- Ta'lim oluvchilarar bir-biridan - tajribaning mavjudligi va xarakteri, shuningdeko'quv faoliyatidagi tajribalarining borligi bilan farqlanadi.
- Tajriba katta yoshli ta'lim oluvchilarning o'qishni davom ettirishga bo'lganehtiyojining asosidir.
- Katta yoshdagi ta'lim oluvchilar o'z tajribasini tahlili orqali yangi bilimlarga egabo'ladilar.
- Tajriba almashinuvi bu kattalar uchun muhim rag'batlantiruvchi omil va yangitajribaga ega bo'lishning eng qisqa yo'lidir.

Bundan shunday xulosaga kelish mumkinki, tajriba almashinuvi imkonini beruvchi metodlardan foydalanish, dasurlash bo'yicha yangi bilimlarni o'zlashtirilishini ta'minlaydi.

Bunday metodlardan biri Sinonim kodlar metodi. Ushbu metodning asosiy maqsadi dastur lavlarini o'xsash lavalari bilan almashtirish orqali ta'lim oluvchilarda dasturni o'qib, tushunish, tahlil qilish va uni soddalashtirish ko'nikmalarini shakllantirish, bir qiymatli dastur lavhalarini aniqlab, ulardan optimalini tanlay olish. Ushbu metoddan refleksiyaning amalga oshirishida ham foydalanish mumkin.

Metodda qo'llaniladigan vositalar: Har bir tinglovchi uchun 1 ta dasturyozilgan tarqatma material.

Metodning qo'llanilishi: Ma'ruza so'ngida, amaliy mashg'ulotlarda, yakka tartibda yoki guruhda qo'llash mumkin.

Metodning amalga oshirilish bosqichlari:

NATIJALAR VA MUHOKAMA

Tinglovchilarga tayyor dastur tarqatma varoqlarda beriladi. Tinglovchilar



dastur lavhalarining ixtiyor qismiga shunday almashtirish kiritishlari kerakki, bu almashtirish dastur natijasiga ta'sir o'tkazmasin. Masalan, $x*x \Rightarrow x**2$

Ya'ni, sinonimik o'zgartirish talab qilinadi. Tinglovchilar imkon qadar ko'proq almashtirishni amalga oshirishlari kerak bo'ladi. Eng ko'p almashtirishni amalga oshirgan g'olib bo'ladi. Dastur hajmidan kelib chiqib vaqt bo'yicha cheklov qo'yilishi mumkin. Vaqt so'ngida eng ko'p almashtirishni bajargan tinglovchi o'zining javoblarini izohlab, taqdimot o'tkazadi. Shundan so'ng, qolgan tinglovchilar qo'simcha javob variantlarini taqdim qilishadi.

Ko'proq almashtirish imkoni bo'lishi uchun dasturda quyidagilardan foydalanish mumkin:

- Qisqartirish amalga oshirilmagan formulalarni. $3*x+7*y-5*x \Rightarrow 7*y-2*x$
- Takrorlanishda ortiqcha qadamlar. Masalan 10 gacha sonlar yig'indisini hisoblashda:

<pre>s=0 for i in range(10): s=s+i print(s)</pre>	=>	<pre>s=0 for i in range(1,10):s=s+i print(s)</pre>
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- Math modulining funksiyalaridan. Masalan $\text{pow}(5,6) \Rightarrow 5**6$
- Har doim bajariluvchi yoki hechqachon bajarilmaydigan dastur lavhalari. Masalan:

<pre>if True: print("salom")</pre>	=>	<pre>print("salom")</pre>
<pre>n=int(input("n=")) if n>3 and 5>8: print("salom")</pre>	=>	<p>Shart operatorini yozmaslik mumkin. Chunki shart n ning harqanday qiymatida yolg'on natija qaytaradi.</p>

- Parametrli takrorlanishlarni qadamlar orqali boshqarish
- | | | |
|--|----|---|
| <pre>for i in range(1,100): if i % 2==0: print(i, end=" ")</pre> | => | <pre>for i in range(2,100,2): print(i, end=" ")</pre> |
|--|----|---|

Metodni qo'llanilishiga misol:

Quyidagi dastur tinglovchilarga tarqatiladi. Ular har bir almashtirishni kod ustiga yozib borishadi. Belgilangan vaqt tugaganida almashtirishlar soni so'raladi.

```
print("n gacha bo'lgan natural sonlar orasida k raqami necha marta
```



uchrashinianiqllovchi dastur ")

```
print("n=",  
end="")  
n=int(input())  
print("k=",  
end="")  
k=input()  
s=""  
p=0  
for i in  
range(1,n+1):  
s=s+str(i)  
for i in  
range(0,len(s)): if  
s[i]==k:  
p+=1  
print(p,"marta uchraydi")
```

Tinglovchilar quyidagicha o'zgartirishlarni kiritishlari mumkin:

print("n=", end="") n=int(input())	=>	n=int(input("n="))
print("k=", end="")k=input()	=>	k=input("k=")
for i in range(0,len(s)):	=>	for i in range(len(s)):
p+=1	=>	p=p+1

XULOSA

Ushbu metod tinglovchilardan ijodkorlikni talab qilib, xotirani rivojlantiradi. Egallagan bilimlarini mustaqil baholash va o'tilgan mavzuga oid tushuncalarni amalda qo'llashga imkon yaratadi. Turli operatorlarning qo'llanilishi bo'yicha g'oyalarni ifodalash va ular orasidagi bog'liqlikni topish malakasini shakllantiradi.



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