

AKSONOMETRIK PROYEKSIYALARNI O‘QITISHDA TALABALARNING FAZOVIY TASAVVURINI OSHIRISH

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ANNOTATSIYA

Ushbu maqolada oliy ta’lim muassasalari chizmachilik darsida talabalarning fazoviy tasavvurini oshirishda aksonometrik proyeksiyalarning o‘rni yoritilgan.

Kalit so‘zlar: Aksonometrik proyeksiya, chizmachilik, fazoviy tasavvur, tasvir, talabalar, oddiy, murakkab, model, ortogonal.

АННОТАЦИЯ

В данной статье освещена роль аксонометрических проекций в повышении пространственного воображения учащихся на уроке черчение высших учебных заведений.

Ключевые слова: Аксонометрическая проекция, черчение, пространственное воображение, изображение, студенты, простое, сложное, модель, ортогональное.

ABSTRACT

This article highlights the role of axonometric projections in increasing the spatial imagination of students in the drawing lesson of higher educational institutions.

Keywords: Axonometric projection, drawing, spatial imagination, image, students, simple, complex, model, orthogonal.

KIRISH

Talabalarning fazoviy tasavvurini kengaytirish chizma geometriya va chizmachilik fanlarida juda katta ahamiyatga ega bo‘lib, u talabalarni ijodiy izlanishlarga yo‘naltiruvchi omillardan biridir.

“Chizmani o‘qish deganda narsaning chizmasini o‘rganish vaqtida uning fazoviy obrazining shakllanishi ro‘y beradigan jarayon tushuniladi” deb o‘zlarining

«O'rta maktabda chizmachilikni o'qitish metodikasi» kitobida S.I Dembinskiy va V.I. Kuzmenkolar yozishgan.

MUHOKAMA VA NATIJALAR

Haqiqatdan ham shunday, biz chizmani ko'zdan kechirib unda tasvirlangan narsaning balandligi, uzunligi va eni hamda uning elementlari tarkibiy qisimlari va shartli belgilarini o'rganib chiqib, narsani ko'z o'ngimizda gavdalantiramiz, ya'ni chizmasini o'qiymiz. Shunday qilib chizmani o'qish deganda narsalarni bajarilgan tasvirlariga asosan uning tashqi va ichki tuzilishlarini bilib hamda fahimlab bir butun obrazni tasavvur qilish, uning o'lchamlarini, ishlov berish usullarini bilish tushuniladi. Bulardan ko'rinib turibdiki, chizmani o'qishda fazoviy tasavvur eng asosiy ko'rsatkich ekan, shu sababli talabalarning fazoviy tassavuri past bo'lsa ular chizmani o'qishda qiynaladilar va chizmachilikka bo'lgan qiziqishlari susayib boradi. Shuning uchun biz chizmachilik fanlari o'qituvchilari butun etiborimizni talabalarning fazoviy tassavurini oshirishga bor kuch g'ayratimizni va metodik so'zlashlarimizni safarbar qilishimiz zarur bo'ladi. Shundagina biz yoshlarni kelgusidagi ishlab chiqarish sharoitiga yoki ta'lim jarayoniga etuk bo'lishlariga erishamiz.

Ilmiy tadqiqot ishimga oid mavzularni asosiy adabiyotlardagi taxlili shuni ko'rsatdiki chizmalarini o'qish, yani chizmada tasvirlangan natijalarni tassavur qilishning quyidagi tartibda oshirilar ekan:

1) Chizmadagi ko'rinishlardan foydalanib narsani fikran oddiy geometrik figuralarga ajratib, uning tashqi sirtlarining formasini aniqlash;

2) Chizmachilikdagi kesim va qirqlardan foydalanib, uning ichki tuzilishlarini anglab va faximlab etish;

3) Narsaning tarkibiy qisimlarini tahlil qilib va o'rganib chiqib uning bir butun yaxlit obrazini fazoda tiklash-tassavur qilish;

4) Chizmada keltirilgan shartli belgilardan masalan (\emptyset), (R), (\square) va (\triangleright) kabi belgilardan foydalanib narsaning ayrim sirtlari va yuzalari to'g'risida qo'shimcha tassavurga ega bo'lish.

Fazoviy tassavurlash usullari to'g'risida tahlil qilib chiqilgan adabiyotlarda faqatgina mashq qilish usullari to'g'risida gap boradi. Mashq qilish usullariga quyidagi turlari kiradi.

1. Sodda, o'rta, murakkab va o'ta murakkab narsalarning chizmasidan foydalanib ularning oddiydan murakkabga asosida yaqqol tasvirini bajarish hamda ularni chizmalari bilan qiyoslash;

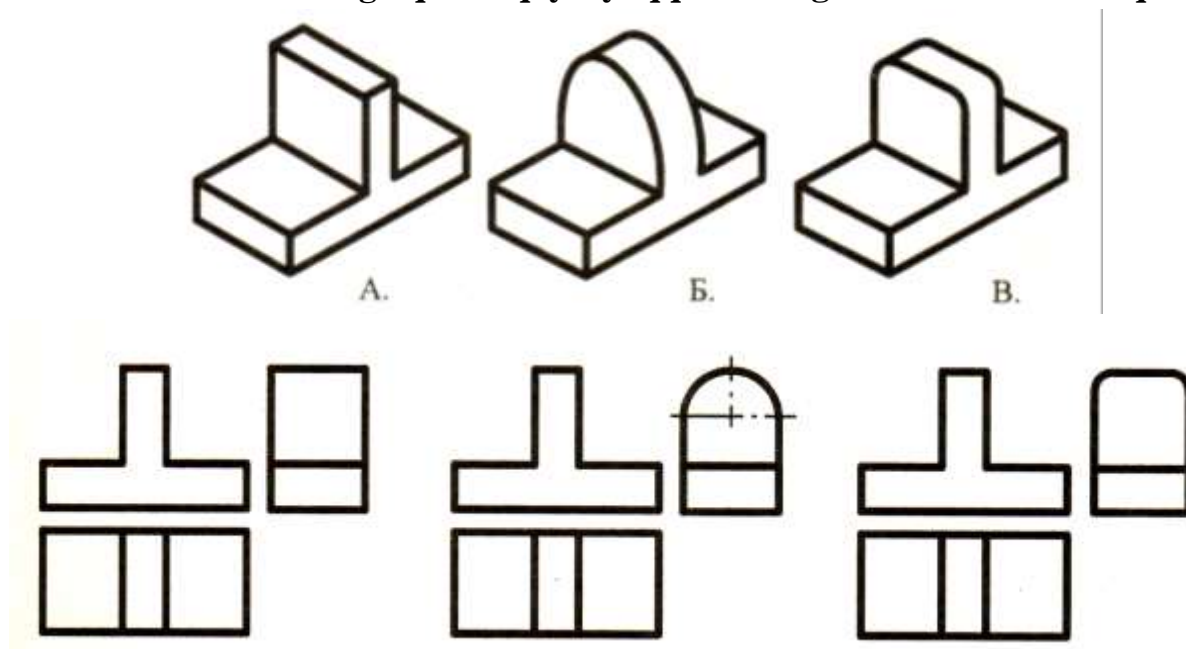
2. Yaqqol tasvirlarga mos keluvchi proyeksiyalarni proyeksiyalar bankidan topish va uning aksinchasi, yani berilgan ko‘rinishlarga mos bo‘lgan narsaning yaqqol tasvirini to‘g‘ri topish.

3. Narsaning chizmasini asliga yoki yaqqol ko‘rinishga qarab bajarish;
4. Yozma tavsifi bo‘yicha ko‘rinishlari va yaqqol tasvirini bajarish;
5. Narsani ikki ko‘rinishi bo‘yicha uchinchisini yasash.
6. Narsalarining kesilishi rejalashtirilgan elementlarining chizmasini bajarish.
7. Chizmasi bo‘yicha narsalarni turli materiallardan modellarini yasash.
8. Yig‘ma birlikning yig‘ish chizmasini detallarga ajratish.

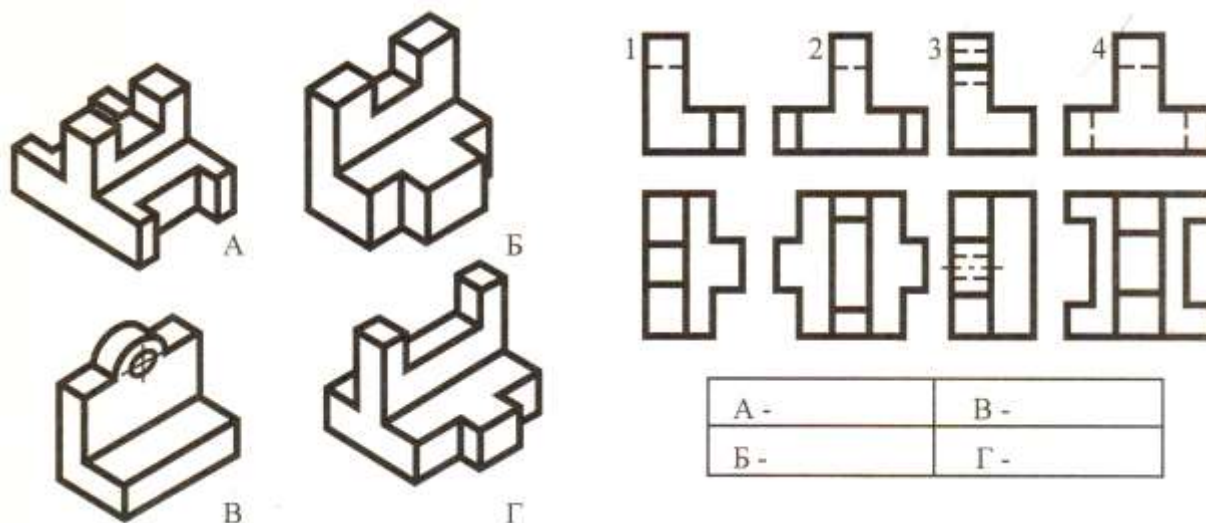
Fazoviy tassavurini o‘stirishadigan mashq qilish usulining yuqorida qayd etilgan turlari bir-biri bilan uzviy bog‘langan bo‘lib ular talabalardan etarli nazariy bilim va amaliy ko‘nikma hamda malaka talab qiladi.

Mashq qilishning turlarini metodik nuqtai nazardan taxlil qilinsa, ular “Oddiydan murakkablikka” prinsipiga mos keladi. Shuning uchun biz o‘z ishimizda fazoviy tassavurning o‘stirishni mashq qilish usulining ayrim turlarini chuqurroq o‘rganishni metodik to‘g‘ri deb topdik. Chunki talabalar chizmachilik fani dasturidagi rejalashtirilgan proyeksion chizmachilikga oid mavzularni o‘rganish jarayonida bu turlardagi vazifalarni bajaradilar.

Uchta ko‘rinishga qarab qaysi yaqqol tasvirga mos kelishini aniqlang



Berilgan yaqqol tasvirga qaysi ikki ko‘rinish mos kelishini aniqlang va belgilang



Fazoviy obrazlarga tayanib ish ko‘rish va shu asosda turli o‘quv ishlab chiqarish vazifalarini bajarish inson aqliy foliyatining muhim xususiyatidir.

XULOSA

Talabalarning fazoviy tasavvurlarini shakllantirish va kengaytirish bilan bog‘liq bo‘lgan malakani oshirish grafik faoliyatining eng muhim tarkibiy qismidir. Hech qanday fan fazoviy tasavvur va fazoviy farazni chizmachilikdek rivojlantira olmaydi.

O‘qitish amaliyotida foydalaniladigan masalalar talabalar tafakkur faoliyatiga ta‘sir ko‘rsatishi aniqlandi. Shunday ekan talabalarning ijodiy ishlashga intilish, fazoviy tasavvurini rivojlantirish, ongli faolligini shakllantirishda chizmachilik fanida katta ahamiyatga ega.

ADABIYOTLAR (REFERENCES)

1. Rahmonov I., Valiyev A. "Chizmachilik (chizmachilik fanida konstruksiyalash asoslari)". -T.: Voris-nashriyot, 2011-y.
2. Ashirboyev A., Ro‘ziyev E., Tashimov N. "Mutaxassislik fanlarini o‘qitish metodikasi". -T.: «Nodirabegim» nashriyoti, 2020-y.
3. Tashimov N. Umumiy o‘rta ta‘lim maktab chizmachilik fanida o‘quvchilarning fazoviy tasavvurini oshirishda aksonometrik proyeksiyalarning o‘rni. Halq ta‘limi jurnali. 2020/4
4. Khalimov Mokhir Karimovich. (2022). ELEMENTS OF STUDENT SPACE IMAGINATION IN THE TEACHING OF GRAPHIC SCIENCES AND METHODS OF USING IT. *CURRENT RESEARCH JOURNAL OF PEDAGOGICS*, 3(02), 103–116. <https://doi.org/10.37547/pedagogics-crjp-03-02-19>

5. Rustam Ravshanovich, J. (2021). Formation of Creative Abilities of Students by Teaching the Genre "Landscape" of Fine Arts. *Spanish Journal of Society and Sustainability*, 1, 1-8. Retrieved from <http://sjss.indexedresearch.org/index.php/sjss/article/view/1>
6. Kozim, M., Zilola, F., & Sanjarbek, S. (2019). DETERMINATION OF THE PARAMETERS OF THE DEFAULT ISOMETRIC VIEW USING METHOD OF RECTANGULAR AUXILIARY PROJECTION. *European Journal of Research and Reflection in Educational Sciences Vol*, 7(12).
7. Халимов, М. К. Сравнение продуктивности учебной доски и проектора в преподавании предметов, входящих в цикл инженерной графики / М. К. Халимов, Р. Р. Жабборов, Б. Х. Абдуханов, А. А. Мансуров. — Текст : непосредственный // Молодой ученый. — 2018. — № 6 (192). — С. 203-205. — URL: <https://moluch.ru/archive/192/48066/>
8. Xalimov, M. K., & Asanova, A. S. (2022, January). CHIZMA GEOMETRIYA VA MUHANDISLIK GRAFIKASI FANIDA DIDAKTIK O'YINLARDAN FOYDALANIB TALABALARNING DASTLABKI TUSHUNCHALARINI SHAKLLANTIRISH. In *International journal of conference series on education and social sciences (Online)* (Vol. 2, No. 1).
9. Адиллов, П., Ташимов, Н., & Есбоғанова, Б. (2021). МУҲАНДИСЛИК ГРАФИКАСИНИ АВТОМАТИК ЧИЗИШ ДАСТУРЛАРИДАН ФОЙДАЛАНИБ ЎҚИТИШДА ДИДАКТИК МУАММОЛАРНИ ЕЧИШ ЙЎЛЛАРИ. *Нукусский государственный педагогический институт имени Аджинияза журнал «Фан ва жамият»*, 2(2015-2), 34–35. извлечено от <https://science.ndpi.uz/index.php/science/article/view/68>
10. Мурадов, Ш. К., Ташимов, Н. Э., & Рахматова, И. И. (2017). Сечение поверхностей 2-го порядка общего вида по эллипсу заданной площади. *Молодой ученый*, (50), 99-102.
11. ПОВЕРХНОСТЕЙ, С. 2-ГО ПОРЯДКА ОБЩЕГО ВИДА ПО ЭЛЛИПСУ ЗАДАННОЙ ПЛОЩАДИ МУРАДОВ ШМИДТ КАРИМОВИЧ. ТАШИМОВ НУРЛАН ЭРПОЛАТОВИЧ, РАХМАТОВА ИКБОЛХОН ИНОМЖАНОВНА, КУКИЕВ БОБУРМИРЗО БАХОДИР УГЛИ *Ташкентский государственный университет имени Низами*.
12. Nematovich, V. A. Z., & Karimberdiyevich, S. S. (2022). TEACHING PERSPECTIVE BASED ON INNOVATIVE TECHNOLOGIES. *Web of Scientist: International Scientific Research Journal*, 3(1), 678-687.

13. N. Valiev. (2021). ABOUT THE FEATURES OF THE PERSPECTIVE OF SIMPLE GEOMETRIC SHAPES AND PROBLEMS IN ITS TRAINING. *International Engineering Journal For Research & Development*, 6(2), 7. <https://doi.org/10.17605/OSF.IO/5MT2R>
14. Ugli, D. S. D., & Ugli, A. B. I. (2022). MODULAR TECHNOLOGY OF TEACHING ENGINEERING COMPUTER GRAPHICS TO FUTURE TEACHERS DRAWING. *CURRENT RESEARCH JOURNAL OF PHILOLOGICAL SCIENCES* (2767-3758), 3(01), 101-107.
15. Shoxboz Dilshodbek O'G'Li Dilshodbekov, & Aldiyar Alisher O'G'Li Abdulxatov (2022). MUHANDISLIK GRAFIKASI FANLARINI O'QITISHDA ZAMONAVIY GRAFIK DASTURLARDAN FOYDALANISH METODIKASI. *Scientific progress*, 3 (3), 7-14.
16. Zaitov, S. R. (2022). CHIZMA GEOMETRIYA FANIDAN MUSTAQIL ISHLARINI BAJARISHDA AXBOROT TA'LIM TEXNOLOGIYASINING O'RNI. *БАРҚАРОРЛИК ВА ЕТАКЧИ ТАДҚИҚОТЛАР ОНЛАЙН ИЛМИЙ ЖУРНАЛИ*, 219-223.
17. P. Adilov, N. Tashimov, S. Seytimbetov (2019). Computer-Test Control of Knowledge of Students in Engineering Graphics. *International Journal of Progressive Sciences and Technologies (IJPSAT)*. Vol. 17 No. 2 November 2019, pp. 193-195
18. Muslimov, Sherzod Nazrullayevich (2019) "THE ROLE OF PERSONALITY-ORIENTED EDUCATION IN THE DEVELOPMENT OF PROFESSIONALLY-GRAPHIC COMPETENCE OF FUTURE TEACHERS OF TECHNOLOGICAL SCIENCES," *Scientific Bulletin of Namangan State University*: Vol. 1 : Iss. 6, Article 80.
19. Jabbarov, R., & Rasulov, M. (2021). FURTHER FORMATION OF STUDENTS' CREATIVE ABILITIES BY DRAWING LANDSCAPES IN PAINTING. *Збірник наукових праць ЛОГОΣ*. <https://doi.org/10.36074/logos-30.04.2021.v2.09>
20. Muslimov Narzulla Alikhanovich, Urazova Marina Batyrovna, Muslimov Sherzod Narzullaugli. (2020). DEVELOPMENT OF DESIGN TECHNOLOGY FOR FUTURE VOCATIONAL EDUCATION TEACHERS, MODEL OF TRAINING AND BASIC INDICATORS OF DISSERTATION. *PalArch's Journal of Archaeology of Egypt/ Egyptology*, 17(7), 10534-10551. Retrieved from <https://www.archives.palarch.nl/index.php/jae/article/view/4088>

21. Tashimov, N. (2019). Ways of Development of Cognitive and Graphic Activity of Students. *International Journal of Progressive Sciences and Technologies*, 17(1), 212-214.
22. Shoxboz, D. (2019). THE ESSENCE OF TEACHING ENGINEERING COMPUTER GRAPHICS AS A GENERAL TECHNICAL DISCIPLINE. *European Journal of Research and Reflection in Educational Sciences Vol*, 7(12).
23. Xalimov M., &Farxodova, Z. (2021). DEVELOPING STUDENTS' CREATIVE ABILITIES BY MAKING PROBLEM SOLUTION SITUATION IN DRAWING SUBJECT. *Збірник наукових праць ЛОГОΣ*.
<https://doi.org/10.36074/logos-30.04.2021.v2.62>
24. Seytimbetov, S. M. (2022). TALABALARNING IJODKORLIK OBILİYATINI GEOMETRIK SHAKLLARNI PARAMETRLASH MASALALARI ORQALI RIVOJLANTIRISH. *Бошқарува Этика Қоидалари онлайн илмий журналы*, 2(3), 27-32.
25. Malikov, K. G. (2020). Theory and practice of construction of axonometric projects. *European Journal of Research and Reflection in Educational Sciences Vol*, 8(9).
26. Tashimov Nurlan, Samandar Zaitov. (2021) Improving the quality and efficiency of teaching descriptive geometry in a credit-modular system. *ACADEMICIA: AN INTERNATIONAL MULTIDISCIPLINARY RESEARCH JOURNAL*. Volume:11, Issue:2, pp-730-733. DOI : [10.5958/2249-7137.2021.00398.0](https://doi.org/10.5958/2249-7137.2021.00398.0)
27. Gulomova, N. (2021). “Uzatmalar” mavzusini o‘qitishda “iSpring Quiz Maker” dasturidan foydalanib, talabalarga nostandart testlar orqali bilish faolligini faollashtirish. *Жамият ва инновациялар*, 2(5), 8–18. <https://doi.org/10.47689/2181-1415-vol2-iss5-pp8-18>
28. Аширбаев, А. (2021). Chizmalarga o‘lcham qo‘yishda yuzaga kelishi mumkin bo‘lgan tipik xatolar va ularning oldini olish omillari. *Общество и инновации*, 2(3), 7-15.