

2-SHO‘BA. MUHANDISLIK VA KOMPYUTER GRAFIKASI FANLARINI INTEGRATSIYA QONUNIYATLARI ASOSIDA TAKOMILLASHTIRISHNING ZAMONAVIY PEDAGOGIK TEXNOLOGIYALARI

CHIZMACHILIK O‘QITISH JARAYONIDA AUTOCAD DASTURIDAN SAMARALI FOYDALANISH

Tadjibayev Azizbek Batirovich
Namangan davlat pedagogika instituti
Art pedagogika kafedrası dotsenti, PhD

Annotatsiya: Mazkur maqolada chizmachilik fanini o‘qitish jarayonida AutoCAD dasturidan samarali foydalanishning nazariy va amaliy jihatlari tahlil qilingan. Raqamli texnologiyalar asosida grafik savodxonlikni rivojlantirish, talabalar ijodiy va texnik tafakkurini shakllantirish hamda ta’lim samaradorligini oshirish yo‘llari yoritilgan. AutoCAD dasturining imkoniyatlari orqali murakkab chizmalarni tez va aniq bajarish, vizual tasavvurni rivojlantirish va amaliy ko‘nikmalarni mustahkamlash masalalari ilmiy asosda bayon etilgan.

Kalit so‘zlar: chizmachilik, AutoCAD, grafik savodxonlik, raqamli texnologiya, kompyuter grafikasi, fazoviy tafakkur, modellashtirish, texnik chizma, ta’lim samaradorligi, innovatsiya

Bugungi kunda ta’lim tizimining raqamlashtirilishi barcha fanlar qatori chizmachilik fanini o‘qitish metodikasiga ham sezilarli ta’sir ko‘rsatmoqda. An’anaviy chizma chizish usullari o‘z ahamiyatini yo‘qotmagan holda, zamonaviy dasturiy vositalar bilan boyitilmoqda. Ayniqsa, AutoCAD dasturi chizmachilikni o‘qitishda keng qo‘llanilayotgan samarali vositalardan biri hisoblanadi. Ushbu dastur yordamida talabalar nafaqat chizmalarni tez va aniqlik bilan bajarish, balki ularni tahlil qilish va takomillashtirish imkoniyatiga ega bo‘ladilar. Chizmachilik fanini o‘qitishda AutoCAD dasturidan foydalanish talabalarning grafik savodxonligini oshirishda muhim omil hisoblanadi. Grafik savodxonlik – bu texnik chizmalarni o‘qish, tushunish va yaratish qobiliyatidir. AutoCAD dasturi esa bu jarayonni soddalashtiradi va avtomatlashtiradi. Natijada talabalar murakkab chizmalarni ham qisqa vaqt ichida bajarish imkoniga ega bo‘ladilar.

AutoCAD dasturining asosiy afzalliklaridan biri uning yuqori aniqlik bilan ishlash imkoniyatidir. An’anaviy usullarda chizma chizishda inson omili tufayli xatolar yuzaga kelishi mumkin bo‘lsa, AutoCAD yordamida bu xatolar minimal

darajaga tushiriladi. Bu esa talabalar tomonidan bajarilgan ishlarning sifatini oshiradi. Shu bilan birga, dasturda mavjud bo'lgan tayyor buyruqlar va vositalar chizmalarni tezkorlik bilan bajarishga yordam beradi.

Chizmachilikni o'qitishda AutoCAD dasturidan foydalanish talabalarning fazoviy tafakkurini rivojlantirishga ham xizmat qiladi. Uch o'lchamli modellash imkoniyatlari orqali talabalar obyektlarning hajmini, shaklini va joylashuvini yaxshiroq tasavvur qila oladilar. Bu esa ularning texnik fikrlash qobiliyatini rivojlantiradi va murakkab masalalarni hal etishda muhim ahamiyat kasb etadi. Ta'lim jarayonida AutoCAD dasturidan foydalanishning samaradorligi o'qitish metodikasiga ham bevosita bog'liqdir. Agar dastur faqat texnik vosita sifatida emas, balki pedagogik vosita sifatida qo'llanilsa, uning natijadorligi yanada oshadi. Masalan, o'qituvchi dars jarayonida bosqichma-bosqich chizma yaratish jarayonini ko'rsatib berishi, talabalar esa bu jarayonni mustaqil ravishda takrorlashi orqali bilimlar mustahkamlanadi.

Shuningdek, AutoCAD dasturidan foydalanishda amaliy mashg'ulotlarga alohida e'tibor qaratish zarur. Talabalar nazariy bilimlarni amaliyot bilan mustahkamlash orqali dasturdan samarali foydalanishni o'rganadilar. Har bir mavzu bo'yicha amaliy topshiriqlar berilishi, talabalar tomonidan mustaqil loyihalar ishlab chiqilishi ularning bilim va ko'nikmalarini yanada rivojlantiradi. Interfaol o'qitish usullari bilan AutoCAD dasturini uyg'unlashtirish ham muhim natijalar beradi. Guruhli ishlash, loyiha asosida o'qitish va muammoli vaziyatlar yaratish orqali talabalar o'z bilimlarini amalda qo'llash imkoniyatiga ega bo'ladilar. Bu esa ularning mustaqil fikrlash va ijodiy yondashuvini rivojlantiradi.

Bundan tashqari, AutoCAD dasturidan foydalanish talabalarni zamonaviy mehnat bozoriga tayyorlashda ham muhim rol o'ynaydi. Hozirgi kunda ko'plab texnik sohalarda ushbu dasturdan foydalanish talab etilmoqda. Shu bois talabalar ushbu dastur bilan ishlash ko'nikmalarini egallash orqali o'z kasbiy raqobatbardoshligini oshiradilar. O'qituvchilarning malakasi ham AutoCAD dasturidan samarali foydalanishda muhim omillardan biridir. O'qituvchi dastur imkoniyatlarini chuqur bilishi va uni to'g'ri qo'llay olishi talabalar uchun sifatli ta'limni ta'minlaydi. Shu sababli o'qituvchilar uchun malaka oshirish kurslari va treninglar tashkil etilishi muhimdir.

Chizmachilik fanini o'qitishda AutoCAD dasturidan foydalanish baholash tizimini ham takomillashtirish imkonini beradi. Talabalar tomonidan bajarilgan ishlarni elektron shaklda saqlash, tahlil qilish va baholash osonlashadi. Bu esa ta'lim jarayonining shaffofligi va samaradorligini oshiradi.

Xulosa qilib aytganda, AutoCAD dasturi chizmachilik fanini o'qitishda zamonaviy va samarali vosita hisoblanadi. U talabalar grafik savodxonligini oshirish, fazoviy tafakkurini rivojlantirish va amaliy ko'nikmalarini mustahkamlashda muhim rol

o‘ynaydi. Dasturdan to‘g‘ri va samarali foydalanish orqali ta‘lim sifati sezilarli darajada oshirilishi mumkin.

Foydalanilgan adabiyotlar

1. Komoldinov, S. J. O. (2026). The pedagogical significance of composition in pencil drawing lessons. *European Journal of Economic Dynamics and Policy*, 2(1), 21-24.
2. Komoldinov, S. J. O. G. L., & Isaboyeva, M. I. Q. (2026). Manzara janrini o‘rgatishda rangtasvir texnikalarining metodik qo‘llanilishi. *Science and Education*, 7(2), 344-349.
3. Jomoldin o‘g‘li, K. S. SCIENCE, RESEARCH AND DEVELOPMENT.
4. Komoldinov, S. (2023, December). Qalamtasvir mashg‘ulotlarida kompozitsiyaning ahamiyati. In *INTERNATIONAL SCIENTIFIC AND PRACTICAL CONFERENCE on the topic: “Priority areas for ensuring the continuity of fine art education: problems and solutions”* (Vol. 1, No. 01).
5. Rakhimov, K. (2023). The place of graphics in the fine arts. *Solution of social problems in management and economy*, 2(2), 5-8.
6. Rakhimov, K. (2023). THE ROLE OF PORTRAIT ARTISTS IN FINE ARTS. *Models and methods in modern science*, 2(2), 13-19.
7. Rakhimov, H. U. (2023). ANALYZING THE PROFESSIONAL QUALITIES OF FUTURE FINE ARTS TEACHERS BASED ON ART STUDIES. *Экономика и социум*, (1-1 (104)), 50-53.
8. Pulatov, D. S., & Kh, R. U. (2019). On fine arts and its varieties. *Вестник магистратуры*, (4-4 (91)), 89-90.
9. ogli Rakhimov, H. U. *AJMR. AJMR*.
10. Oripov, B. B. (2025). Ideals of the third renaissance and their artistic expression in the fine art of Uzbekistan. *Academic Journal of Science, Technology and Education*, 1(8), 28-32.
11. Oripov, B. B. (2025, December). INCREASING THE SCIENTIFIC COMPONENT OF THE ART OF POTTERY IN STUDENTS. In *International Conference Platform* (No. 6, pp. 134-137).
12. Oripov, B. B. (2025). The connection of fine arts to biological science. *Science and Education*, 6(12), 621-626.
13. BADIRJANOVICH, O. (2020). THE ROLE OF CERAMICS IN PROFESSIONAL TRAINING OF YOUNG PEOPLE IN THE MODERN EDUCATION SYSTEM. *THE AMERICAN JOURNAL OF SOCIAL SCIENCE AND EDUCATION INNOVATIONS Учредители: The USA Journals*, 2(9), 447-451.
14. Oripov, B. (2025). O‘QUVCHILARNING RUHIYATINI SHAKLLANTIRISHDA VA TARBIYALASHDA, XALQ AMALIY SAN‘ATINING O‘RNI. *Universal xalqaro ilmiy jurnal*, 2, 4-3.
15. Oripov, B. N. (2008). Tasviriy san‘at ta‘limida didaktika.
16. Oripov, B. N. (2006). Fine art and its teaching methodology. *Tashkent-2005." SCIENCE-INTELLIGENCE*.
17. Oripov, B. (2004). Jahon san'ati tarixi. 3 qismli.
18. Oripov, B. (2004). San'at tarixidan qisqacha izohli lug'at.

19. Yuldashev, J. (2024). BO ‘LAJAK TARIX O ‘QITUVCHILARINI TAYYORLASH JARAYONIGA AKSIOLOGIK YONDASHUVNI JORIY ETISHNING METODIK XUSUSIYATLARI. Farg'ona davlat universiteti, (5), 6-6.
20. Yuldashev, J. (2024). BO‘LAJAK TARIX O‘QITUVCHILARIDA AKSIOLOGIK POZITSIYANI RIVOJLANTIRISHNING PEDAGOGIK ASOSLARI. " ПЕДАГОГИЧЕСКАЯ АКМЕОЛОГИЯ" международный научно-методический журнал, 1(9).
21. Yuldashev, J. BO ‘LAJAK TARIX O ‘QITUVCHILARINING AKSIOLOGIK POZITSIYASINI RIVOJLANTIRISH METODIKASI. DENE TÁRBIYASÍ HÁM SPORT, 251.
22. Ogli, Y. J. A. The Content of the Introduction of the Development of the Axiological Approach in Future History Teachers. JournalNX, 10(10), 34-38.
23. Yuldashev, J. (2024). DEVELOPING THE AXIOLOGICAL POSITION OF FUTURE HISTORY TEACHERS–AS AN IMPORTANT DIRECTION OF HISTORY EDUCATION. Академические исследования в современной науке, 3(50), 33-36.
24. Abdurakhimovich, Y. J. (2024, December). THE MAIN CRITERIA FOR DEVELOPING A SYSTEM OF VALUES IN THE TRAINING OF FUTURE HISTORY TEACHERS. In International Conference on Economics, Finance, Banking and Management (pp. 201-205).
25. Abdurakhimovich, Y. J. (2024, December). THE MAIN CRITERIA FOR DEVELOPING A SYSTEM OF VALUES IN THE TRAINING OF FUTURE HISTORY TEACHERS. In International Conference on Economics, Finance, Banking and Management (pp. 201-205).
26. Yuldashev, J. (2024). DEVELOPING THE AXIOLOGICAL POSITION OF FUTURE HISTORY TEACHERS–AS AN IMPORTANT DIRECTION OF HISTORY EDUCATION. Академические исследования в современной науке, 3(50), 33-36.
27. Ogli, Y. J. A. The Content of the Introduction of the Development of the Axiological Approach in Future History Teachers. JournalNX, 10(10), 34-38.
28. Abdurakhimovich, Y. J. (2024, December). THE MAIN CRITERIA FOR DEVELOPING A SYSTEM OF VALUES IN THE TRAINING OF FUTURE HISTORY TEACHERS. In International Conference on Economics, Finance, Banking and Management (pp. 201-205).
29. Yuldashev, J. (2024). DEVELOPING THE AXIOLOGICAL POSITION OF FUTURE HISTORY TEACHERS–AS AN IMPORTANT DIRECTION OF HISTORY EDUCATION. Академические исследования в современной науке, 3(50), 33-36.
30. Ogli, Y. J. A. The Content of the Introduction of the Development of the Axiological Approach in Future History Teachers. JournalNX, 10(10), 34-38.
31. Yuldashev, J. (2024). BO‘LAJAK TARIX O‘QITUVCHILARIDA AKSIOLOGIK POZITSIYANI RIVOJLANTIRISHNING PEDAGOGIK ASOSLARI. " ПЕДАГОГИЧЕСКАЯ АКМЕОЛОГИЯ" международный научно-методический журнал, 1(9).
32. Odilboyeva, U. Z. (2025, December). The scientific and pedagogical influence of teacher cognition theory on method selection in the educational process. International Conference Platform, 6, 152–157.

33. Odilboyeva, U. Z. Q. (2026). O ‘ZBEK VA INGLIZ TILLARIDA TERMINLAR HOSIL BO ‘LISHINING QIYOSIY TAHLILI. *Mahalliy va xalqaro konferensiyalar platformasi*, (1), 32-36.
34. Odilboyeva, U. Z. (2026, January). THE DEVELOPMENT OF AUTOPEdagogICAL COMPETENCE IN STUDENTS DURING ENGLISH LANGUAGE EDUCATION. In *Claritas Conference Platform* (No. 1, pp. 90-93).
35. Yunusov, G. O. (2026). TALABA-YOSHLAR MA’NAVIYATINI YUKSALTIRISHDA XALQ FOLKLOR SAN’ATINING O ‘RNI. *Mahalliy va xalqaro konferensiyalar platformasi*, (3), 58-62.
36. Rakhimov, H. U. (2026, January). THE SIGNIFICANCE OF AUTOPEdagogICAL COMPETENCE IN VISUAL ARTS EDUCATION. In *Claritas Conference Platform* (No. 1, pp. 30-34).
37. Umarjon ogli, H. R. (2021). Technologies for improving composition and drawing skills based on the rules of composition. *Galaxy International Interdisciplinary Research Journal*, 9(12), 765–767.