**VOLUME 3 / ISSUE 3 / UIF:8.2 / MODERNSCIENCE.UZ** 

#### INSONLAR HAYOTINI YAXSHILASHDA YOSH DAVRLAR PSIXOLOGIYASI FANINI O'RGANISHNING AHAMIYATI

#### Gadayeva Mohigul Muxamedovna

Osiyo Xalqaro Universiteti "Tarix va filologiya" kafedrasi assistenti

#### Ismoilova Zarina Sohibjon qizi

Osiyo xalqaro universiteti 1P- 23 guruh talabasi

https://doi.org/10.5281/zenodo.10873680

Annotatsiya. Ushbu maqolada psixologiyaning insonlar hayotidagi o`rni, kelib chiqish va rivojlanish tarixi, uning tarmoqlari va yosh davrlar psixologiyasi haqida umumiy malumotlar beriladi.

Kalit so`zlar: Psixologiya, psixika, psixologiyaning tadqiqot metodlari, yosh davrlar psixologiyasi.

#### THE IMPORTANCE OF STUDYING THE SCIENCE OF YOUTH PSYCHOLOGY IN IMPROVING PEOPLE'S LIVES

**Abstract.** This article provides general information about the role of psychology in people's lives, the history of its origin and development, its branches, and the psychology of young people.

**Key words:** Psychology, psychology, research methods of psychology, psychology of youth. ЗНАЧЕНИЕ ИЗУЧЕНИЯ НАУКИ ПСИХОЛОГИИ МОЛОДЕЖИ В УЛУЧШЕНИИ ЖИЗНИ ЛЮДЕЙ

**Аннотация.** В статье представлены общие сведения о роли психологии в жизни людей, истории ее зарождения и развития, ее отраслях, психологии молодежи.

**Ключевые слова:** Психология, психика, методы исследования психологии, психология молодежи.

Oʻzbekiston Respublikasining kadrlari oldiga qoʻyilayotgan eng muhim vazifalardan birimalakali mutaxassislar sifatida oʻzligini, oʻz qobilyatlari, individualligi, shaxsiy fazilat hamda xislatlarini bilgan holda atrofdagilar mehnatini oqilona tashkil etish va ijtimoiy foydali mehnatning barcha sohalarida iqtidorli kasb sohasi sifatida faoliyat koʻrsatishidir. Bu oʻrinda inson ruhiyati qonuniyatlarini oʻrganuvchi psixologiya fanining oʻrni kattadir.

Psixologiya so`zining lug`aviy ma`nosi grekcha psyuxe-jon, ruh, logos- fan, ta`limot degan ma`nolarni bildiradi. Psixologiya fan sifatida psixik faktlar, ularning qonuniyatlariva mexanizmlarini o`rganadi.

Psixologiya asosan psixikani keng doirada tadqiq qiladi. Shunga ko`ra psixikaning yuzaga keltiruvchi asosiy psixik faoliyatlari ko`rsatilgan. Aynan psixik faoliyatlar quyidagi jarayonlarni o`z ichiga oladi:

- Bilish faoliyatlari : diqqat, nutq, faoliyat ;
- Bilish jarayonlari : sezgi, idrok, xotira, xayol, tafakkur ;
- Shaxsning hissiy, irodaviy sohasi: hissiyot, iroda;
- Shaxsning individual psixologik xususiyatlari: temperament, xarakter, qobiliyat.[1.7]

M.G.Davletshin fikricha psixika deganda – oliy darajadagi materiyaning (miyaning)xususiyati tushunilib, ob`ektiv borliqni aks ettirilishida namoyon bo`ladi, sub`ekt faoliyatini ma`lum maqsad

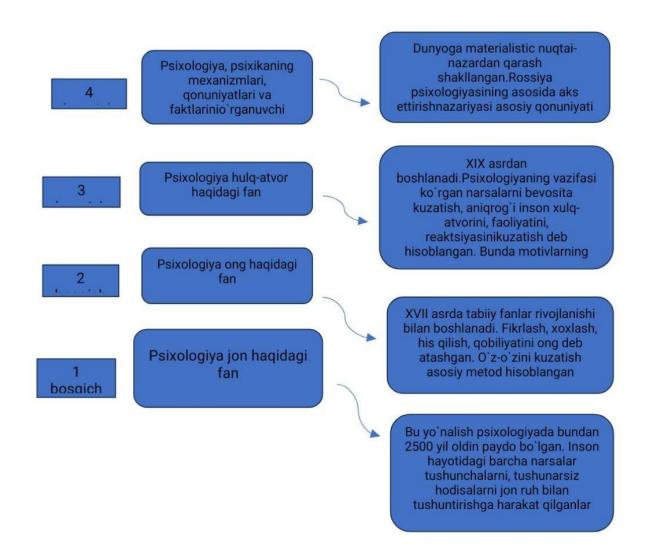
**VOLUME 3 / ISSUE 3 / UIF:8.2 / MODERNSCIENCE.UZ** 

asosida yo`naltiradi hamda xulq-atvor negizida shakllanadi. Professor V.M.Karimova fikricha psixika — inson ruhiyatining shunday holatiki, u tashqi anglashimizni ta`minlaydi.

Psixikaning paydo bo`lishining asosiy shakllari va ularning o`zaro bog`liqligi

- 1. Jarayonlar 2.Holatlar 3.Shaxs xususiyatlari 4.Hissiy- irodaviy Bilish jarayonlari
- ♣ Sezgi. Idrok .Xotira .Xayol.Tafakkur. Nutq.Diqqat Holatlar
- Qiziqish . Ishonuvchanlik.Kayfiyat. Shubhalanuvchanlik.Apatiya.Tushkunlik Shaxs xususiyatlari
- ♣ Yo`nalganlik.Temperament.Xarakter.Qobiliyat Hissiy – irodaviy
- Hissiyot. Iroda

Psixologiyaning fan sifatida yuzaga kelish bosqichlari quyidagi jadvalda o`z aksini topgan:



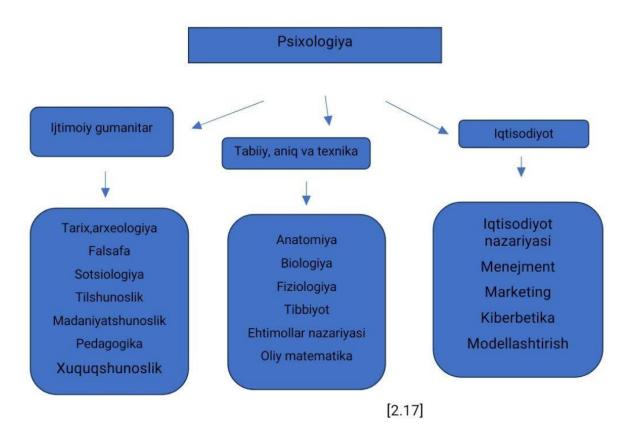
**VOLUME 3 / ISSUE 3 / UIF:8.2 / MODERNSCIENCE.UZ** 

Geraklit, Demokrit, Aflotun, Arastularning ta`limotlari keeyigi asrlarda psixologik g`oyalarni rivojlanishida tayanch nuqta bo`lib hisoblanadi.

Oʻzbekiston oliy maktablarida psixologiya oʻquv fani sifatida1928 yildan boshlab oʻqitilib kelinmoqda. (Xuddi shu davrda L.S.Vigotskiy Oʻrta Osiyoda, Oʻzbekistonda ommaviy ma'ruzalar oʻqilganligi mazkur jarayonni trzlashtirgan asosiy omil boʻlganligiga hech shakshubha yoʻq.

Psixologiya fanining ijtimoiy hayotda nufuzi har soniya sayin ortib bormoqda. Shu tufayli pedagogik ta`lim muassasalarida uni o`qitish yo`lga qo`yila boshlandi. Mazkur soh abo`yicha yuqori malakali mutaxasislar tayyorlash maqsadida Orta Osiyo Davlat Universitetida 1938 yilda (hozir Milliy Universitet) logika va psixologiya bo`lini ochildi. 1950-yillarning 2-yarmidan boshlab pedogogika institutlarida va bilim yurtlarida psixologiya bo`limlari ochildi. Ayniqsa qisqa muddatli 15 va 9 oylik ommaviy psixologlar tayyorlash kurslarining ommaviylashuvi psixologmutaxasislarga nisbatan ehtiyojning kuchayganligini bildiradi.[2.8]

Psixologiyaning boshqa fanlarr bilan bog`liqligi:



Psixologiya fani zamonaviy ta`limotga asoslangan holda inson shaxsining tarkib topishini 3 ta omilning ta`siriga bog`liqligini dalillar asosida izohlab berdi. Ulardan;

- Inson tug`ilib voyaga yetadigan tashqi ijtimoiy muhitning ta`siri;
- Odamga uzoq muddat davomida muntazam tarzda beriladigan ta`lim-tarbiyaning ta`siri;

*VOLUME 3 / ISSUE 3 / UIF:8.2 / MODERNSCIENCE.UZ* 

- Odamga tug`ma ravishda, tayyor holda beriladigan nasliy xususiyatlarning ta`siridir. Ma`lumki, har bir odam o`ziga xos, boshqalarda aynan takrorlanmaydigan ijtimoiy muxitda, aniq ijtimoiy munosabatlarda, ya`ni oila, jamoa va jamiyatda odamlar orasida yashab ulg`ayadi, shakllanadi. [3.15]
  - D.B. Elqonin yosh davrlarini quyidagi bosqichlarga ajratadi:
    - 1. Go`daklik davri- tug`ilgandan 1 yoshgacha yetakchi faoliyat bevosita emotsional muloqot;
    - 2. Ilk bolalik davri- 1 yoshdan 3 yoshgacha yetakchi faoliyat predmetlar bilan nozik harakatlar qilish;
    - 3. Maktabgacha davr 3 yoshdan 7 yoshgacha rolli o`yinlar;
    - 4. Kichik maktab yoshi davri- 7-10 yoshgacha o`qish;
    - 5. Kichik o`smirlik davri- 10-15 yoshgacha shaxsning intim (dilkash, samimiy) muloqot;
    - 6. Katta o`smirlik yoki ilk o`spirinlik davri- 16 yoshdan 17 yoshgacha; yetakchi faoliyat o`qish, kasb tanlash davri.
    - D.B. Elqonin tasnifini koʻpchilik psixologlar tomonidan e'tirof etilsa-da, biroq uning birmuncha munozarali tomonlari mavjud. D.B. Elqoninning mazkur nazariyasi psixologiya fanida, ayniqsa yosh davrlari psixologiyasida muhim oʻrin tutadi.[3.21]

Psixologiyaning an`anaviy, empiric metodlari hozirgi kungacha muvaffaqiyatli qo`llanilmoqda.

- 1. Kuzatish metodi bu turli yoshdagi odamlarning diqqati, xis-tuyg`ulari, nerv sistemasining tashqi ifodalari, temperament xususiyatlari, imo-ishoralari, sezgirligi, xulq-atvori, nutq faoliyati va xokazolarni oʻrganadi. Bu metod obʻektiv (tashqi) va subʻektiv (ichki) kuzatish turlari bor
- 2. Suhbat metodi. Bu metod bilan inson psixikasini oʻrganishda suhbatning maqsadi va vazifasi belgilanadi, uning obʻekti va subʻekti tanlanadi, mavzusi, oʻtkaziladigan vaqti aniqlanadi, yakka shaxslar, guruh va jamoa bilan oʻtkazishrejalashtiriladi, oʻrganilayotgan narsa bilan uzviy bogʻliq savol javob tartibi tayyorlanadi. Bu orqali turli yoshdadi odamlarning tafakkuri, xulq-atvori, ziyrakligi, dunyoqarashi, eʻtiqodi, irodasitoʻgʻrisida ma'lumotlar yigʻiladi.
- 3. Test metodi. Test inglizcha sinash, tekshirish demakdir. Shaxsning aqliy o`sishini, qobiliyatini, irodaviy sifatlari va boshqa psixik xususiyatlarini tekshirishda qo`llaniladigan qisqa standard masala, topshiriq, misol, jumboqlar test deyiladi. 1905 yildan, ya`ni fransuz olimi A. Bine va uning shogirdi A. Simon insonning aqliy o`sish va is`tedod darajalarini o`lchash imkoniyati borligini g`oyasini ilgari surganidan keyin psixologiyada metod qo`llanila boshladi.
- 4. Tajriba metodi. Bu turli yoshdagi odamlarning psixikasini chuqurroq, aniqroq tadqiq qilish metodlar Ichida eng muhimi hisoblanadi. eksperement metodi yordamida sun`iy tushunchalarning shakllanishi, nutqning o`sishi, favqulotda xolatlardan chiqish, muammoli vaziyatni hal qilish jarayonlari, shaxsning xis-tuyg`ulari, xarakteri va tipologik xususiyatlarini o`rganadi.

**VOLUME 3 / ISSUE 3 / UIF:8.2 / MODERNSCIENCE.UZ** 

- 5. Sotsiometrik metod. Bu metod guruh a`zolari o`rtasidagi bevosita emotsional munosabatlarni o`rganish va ularning darajasini o`lchashda qo`llanilani. Unga amerikalik sotsiolog Djon Morenko asoslangan.
- 6. Anketa metodi. U odatda 3 xil bo`ladi:
- Anglashilgan motivlarni aniqlashga mo`ljallangan savollar tuziladi;
- Xar bir savolning bir nechtadan tayyor javobi beriladi;
- Sinaluvchiga yozilgan to`g`ri javoblarni ballar bilan baxolash tavsiya etiladi. Anketadan turli yoshdagi odamlarning layoqatlarini, muayyyan sohaga qiziqishlari va qobiliyatlarini, o`ziga, tengdoshlariga, katta va kichiklarga munosabatlarini aniqlash maqsadida qo`llaniladi. [3.9]

Xulosa

Har bir yosh davrining psixologik xususiyatlarini hisobga olgan holda ta`limiy va tarbiyaviy ta`sir o`tkazish insonda o`z - o`zini anglashni vujudga keltiradi. Shaxsda o`z-o`zini anglash tuyg`usi qancha erta uyg`onsa, shaxsiy nuqtai nazar, o`z xulqini xis qilish, o`zining amaliy va jismoniy imkoniyatlarini baholash shunchalik tez paydo bo`ladi. Umuman ijtimoiy hayotning barcha jabhalarida — jumladan, oila, tarbiya muassasalari, ishlab chiqarish korxonasi va jamoat tashkilotlarida psixologik ilmlardan foydalanish ta`lim va tarbiyada shaxslararo ijobiy munosabatlar o`rnatishning, ishlab chiqarish samaradorligini oshirishning garovidir.

#### **REFERENCES**

- 1. F.I.Xaydarova, N.I.Xalilova "Umumiy Psixologiya"
- 2. B.M.Umaron "Psixologiya"
- 3. M.Xolnazarova" Yosh va pedogogik psixologiya".
- 4. 4.Gadayeva Mohigul Muxamedovna. (2023). INNOVATSION TA`LIM-BUYUK KELAJAK POYDEVORI . *World Scientific Research Journal*, *17*(1), 74–76. Retrieved from <a href="http://www.wsrjournal.com/index.php/wsrj/article/view/2767">http://www.wsrjournal.com/index.php/wsrj/article/view/2767</a>
- 5. Gadayeva, M. (2024). ABOUT THE HISTORY OF THE VEIL OR MEDIEVAL WOMEN'S DRESS. *Modern Science and Research*, *3*(2), 1097–1103. Retrieved from https://inlibrary.uz/index.php/science-research/article/view/29537
- 6. Universiteti, G. M. M. O. X. (2023). UCHINCHI RENESANS DAVRIDA AJDODLARIMIZ MEROSINI ORGANISH ORQALI INTEGRATSION TA'LIMNI YANADA TAKOMILLASHTIRISH TAMOYILLARI: ЧАСТЬ 1 ТОМ 1 ИЮЛЬ 2023 год. Лучшие интеллектуальные исследования, *I*(1), 11-16.
- 7. Gadayeva Mohigul Muxamedovna. (2023). HISTORY OF PATRIOTIC WOMEN . *International Journal Of History And Political Sciences*, *3*(12), 69–75. https://doi.org/10.37547/ijhps/Volume03Issue12-12
- 8. Gadayeva, . M. . (2023). THE UNIQUE SIGNIFICANCE OF MASTERING SOCIAL SCIENCES DURING THE DEVELOPMENT OF THE NEW UZBEKISTAN. *Modern Science and Research*, 2(10), 459–464. Retrieved from https://inlibrary.uz/index.php/science-research/article/view/25292
- 9. Gadayeva, M. (2024). EFFECTIVE WAYS TO USE THE "THOUGHTSTORM" METHOD ON THE THEME OF THE "EASTERN RENAISSANCE" ERA. *Modern*

**VOLUME 3 / ISSUE 3 / UIF:8.2 / MODERNSCIENCE.UZ** 

- Science and Research, 3(1), 1024–1027. Retrieved from <a href="https://inlibrary.uz/index.php/science-research/article/view/28631">https://inlibrary.uz/index.php/science-research/article/view/28631</a>
- 10. Gadayeva, M. (2024). ATTACK ACTION. *Modern Science and Research*, *3*(1), 1028–1033. Retrieved from <a href="https://inlibrary.uz/index.php/science-research/article/view/28634">https://inlibrary.uz/index.php/science-research/article/view/28634</a>
- 11. Gadayeva, M. (2023). ONE OF THE TIMURID QUEENS IS BIBIKHONIM. *Modern Science and Research*, 2(12), 749–754. Retrieved from <a href="https://inlibrary.uz/index.php/science-research/article/view/27189">https://inlibrary.uz/index.php/science-research/article/view/27189</a>
- 12. Ashurovich, B. A. . (2024). Results of the Archaeological Research Works Carried Out in Bactria. *EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION*, *4*(3), 113–119. Retrieved from <a href="https://www.inovatus.es/index.php/ejine/article/view/2686">https://www.inovatus.es/index.php/ejine/article/view/2686</a>
- 13. Bobohusenov, A. (2024). HISTORICAL GEOGRAPHY OF BUKHARA OASIS. Modern Science and Research, 3(2), 634–640. Retrieved from <a href="https://inlibrary.uz/index.php/science-research/article/view/29429">https://inlibrary.uz/index.php/science-research/article/view/29429</a>
- 14. Akmal, B. (2024). THE GREAT WALL OF THE EARLY MIDDLE AGES KANPIRAK WALL. Modern Science and Research, 3(1), 694–698. Retrieved from <a href="https://inlibrary.uz/index.php/science-research/article/view/28381">https://inlibrary.uz/index.php/science-research/article/view/28381</a>
- 15. Bobohusenov Akmal. (2023). BUXORO VOHSINING ANTIK DAVRI SHISHA BUYUMLARI. *TADQIQOTLAR*, 25(2), 208–211. Retrieved from <a href="http://tadqiqotlar.uz/index.php/new/article/view/307">http://tadqiqotlar.uz/index.php/new/article/view/307</a>
- 16. Bobohusenov Akmal Ashurovich. (2023). THE MATERIAL CULTURE OF THE TOMBS OF THE ANCIENT AND EARLY MEDIEVAL PERIOD. *International Journal Of History And Political Sciences*, *3*(11), 24–29. https://doi.org/10.37547/ijhps/Volume03Issue11-06
- 17. Bobohusenov Akmal. (2023). ANTIK VA ILK OʻRTA ASRLAR DAVRI MOZOR-QOʻRGʻONLARI MODDIY MADANIYATI . *ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ*, *35*(3), 65–70. Retrieved from <a href="https://www.newjournal.org/index.php/01/article/view/10037">https://www.newjournal.org/index.php/01/article/view/10037</a>
- 18. Bobohusenov Akmal. (2023). ANTIK VA ILK OʻRTA ASRLAR DAVRI MOZOR-QOʻRGʻONLARI MODDIY MADANIYATI . *ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ*, *35*(3), 65–70. Retrieved from <a href="https://www.newjournal.org/index.php/01/article/view/10037">https://www.newjournal.org/index.php/01/article/view/10037</a>
- 19. Bobohusenov , A. (2023). BUXORO VOHASINING ANTIK DAVRI YODGORLIKLARI. *SCHOLAR*, *1*(28), 298–302. Retrieved from <a href="https://researchedu.org/index.php/openscholar/article/view/5055">https://researchedu.org/index.php/openscholar/article/view/5055</a>
- 20. Bobohusenov Akmal. (2023). BUXORO VOHSINING ANTIK DAVRI SHISHA BUYUMLARI. *TADQIQOTLAR*, 25(2), 208–211. Retrieved from <a href="http://tadqiqotlar.uz/index.php/new/article/view/307">http://tadqiqotlar.uz/index.php/new/article/view/307</a>
- 21. Tursunova, M., & Bobohusenov, A. (2023). QADIMGI VARAXSHA DEVORIY GANCH VA LOY BEZAKLARI. SCHOLAR, 1(28), 303–308. <a href="https://doi.org/10.5281/zenodo.10026873">https://doi.org/10.5281/zenodo.10026873</a>

**VOLUME 3 / ISSUE 3 / UIF:8.2 / MODERNSCIENCE.UZ** 

- 22. Toshpolatova Shakhnoza Shuhratovna. (2023). ETHNOLOGICAL ANALYSIS OF NATIONAL COSTUMES AND RITUALS OF TAJIKS IN THE WORKS OF M. S. ANDREYEV. *International Journal Of History And Political Sciences*, *3*(12), 42–47. <a href="https://doi.org/10.37547/ijhps/Volume03Issue12-08">https://doi.org/10.37547/ijhps/Volume03Issue12-08</a>
- 23. Muxamedovna, G. M. (2023). XXI ASR KÓNIKMALARINI SHAKLLANTIRISHDA INTEGRATSIYALASHGAN TA'LIMNING MUAMMO VA YECHIMLARI. *PEDAGOGICAL SCIENCES AND TEACHING METHODS*, *3*(26), 93-96
- 24. Muxamedovna, G. M. (2023). XXI ASR KÓNIKMALARINI SHAKLLANTIRISHDA INTEGRATSIYALASHGAN TA'LIMNING MUAMMO VA YECHIMLARI. World scientific research journal, 20(1), 135-138.
- 25. Muxamedovna, G. M. (2023). INNOVATSION TEXNOLOGIYARNI O'ZLASHTIRISHDA TALABALARNING KREATIVLIK SALOHIYATINI RIVOJLANTIRISHNING АНАМІЧАТІ. ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ, 21(3), 3-6.
- 26. GADAYEVA, M. M. INTEGRATSION TA'LIMDA MANTIQIY VA TANQIDIY TAFAKKURNING PEDAGOGIK-PSIXOLOGIK ASOSLARI. *PSIXOLOGIYA* Учредители: Бухарский государственный университет, (2), 60-64.
- 27. Toshpo'latova, S. (2023). M. S. ANDREYEV-SCIENTIFIC CAREER. *Modern Science and Research*, 2(12), 801–807. Retrieved from https://inlibrary.uz/index.php/science-research/article/view/27191
- 28. Toshpulatova Shakhnoza Shuhratovna. (2023). ETYMOLOGY OF TAJIK MARRIAGE CEREMONY. *International Journal Of History And Political Sciences*, *3*(11), 17–23. https://doi.org/10.37547/ijhps/Volume03Issue11-05
- 29. Toshpo'latova, S. (2023). ETHNOLOGICAL ANALYSIS OF CALENDRICAL CALCULATION AND LENGTH MEASUREMENTS OF KHUF VALLEY TAJIKS IN THE RESEARCHES OF MS ANDREYEV. *Modern Science and Research*, 2(10), 291-299
- 30. Toshpoʻlatova, S. S. (2023). TOJIKLAR MILLIY KIYIM-KECHAKLARI VA "BESHMORAK" MAROSIMINING ETNOLOGIK TAHLILI. *SCHOLAR*, 1(28), 395-401.
- 31. Toshpo'latova, S. (2023). A STUDY OF THE WEDDING CEREMONY OF THE TAJIKS OF AFGHANISTAN. *Modern Science and Research*, 2(9), 84-89.
- 32. Srojeva, G. (2024). SOLUTIONS, RESULTS AND PROBLEMS OF REFORMS IN THE FIELD OF EDUCATION. Modern Science and Research, 3(1), 782–788.
- 33. Srojeva, G. (2024). EFFECTIVE FORMS OF SPIRITUAL AND MORAL EDUCATION AND EDUCATIONAL WORK IN A PRESCHOOL EDUCATIONAL INSTITUTION. Modern Science and Research, 3(2), 247–253. Retrieved from <a href="https://inlibrary.uz/index.php/science-research/article/view/29010">https://inlibrary.uz/index.php/science-research/article/view/29010</a>
- 34. Vahobovna, S. G. (2021). Khoja Abdulkhaliq Ghijduvani And Its Method. European Journal of Humanities and Educational Advancements, 2(10), 39-40.
- 35. Srojeva, Gulbahor. "CONTINUITY IN EDUCATION-CHIEF MEZON." Modern Science and Research 2.12 (2023): 834-839.

**VOLUME 3 / ISSUE 3 / UIF:8.2 / MODERNSCIENCE.UZ** 

- 36. Srojeva, G. (2024). SOLUTIONS, RESULTS AND PROBLEMS OF REFORMS IN THE FIELD OF EDUCATION. Modern Science and Research, 3(1), 782–788.
- 37. Srojeva, G. (2023). LOWER ZARAFSHAN OASIS TOURISM OPPORTUNITIES. Modern Science and Research, 2(10), 199–204.
- 38. Shokir o'g'li, S. U. (2023). MAHALLANING JAMIYAT IJTIMOIY TARAQQIYOTIDAGI O'RNI. Научный Фокус, 1(6), 369-371.
- 39. Sadullayev, U. (2024). MIRZA SIROJ HAKIM AND HIS LEGACY. Modern Science and Research, 3(2), 902–910. Retrieved from https://inlibrary.uz/index.php/science-research/article/view/29502
- 40. Shokir o'g'li, S. U. (2023). MAHALLA TUSHUNCHASINING VUJUDGA KELISHI HAQIDA.
- 41. Sadullayev, U. . (2024). THE NEIGHBORHOOD IS THE CRADLE OF VALUES. *Modern Science and Research*, *3*(1), 607–613. Retrieved fromhttps://inlibrary.uz/index.php/science-research/article/view/28343
- 42. Bafoeva, R. (2023). The concept of family in English, Russian and Uzbek proverbs. *American Journal of Language, Literacy and Learning in STEM Education* (2993-2769), *I*(10), 651–654. Retrieved from https://grnjournal.us/index.php/STEM/article/view/2279