ORIGINAL ARTICLE

FROM SCROLLS TO SCREENS DIGITALIZATION OF NAVOIY'S WORK

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Annotatsiya: Ushbu maqolada Alisher Navoiy merosining raqamlashtirilishi, ya'ni qadimiy qo'lyozmalardan zamonaviy raqamli formatlarga o'tkazilishi jarayoni, bu borada amalga oshirilayotgan ilmiy va texnologik ishlar, shuningdek, Navoiy asarlarini keng jamoatchilik, ayniqsa yosh avlod orasida ommalashtirishdagi ahamiyati yoritiladi. Maqolada raqamli platformalar orqali Navoiy asarlarining global miqyosda tadqiq qilinishi va o'rganilishiga imkoniyatlar yaratilayotgani haqida so'z yuritiladi.

Kalit so'zlar: Alisher Navoiy, raqamlashtirish, qo'lyozmalar, zamonaviy texnologiyalar, ilmiy izlanishlar, raqamli arxiv, madaniy meros, axborot texnologiyalari, onlayn platforma, global ommalashtirish.

Abstract: This article explores the digitalization process of Alisher Navoiy's legacy, highlighting the transition from ancient manuscripts to modern digital formats. It discusses the scientific and technological efforts behind this transformation and emphasizes the role of digitalization in popularizing Navoiy's works among the general public, especially the youth. The article also examines the global opportunities for studying Navoiy's heritage through digital platforms.

Keywords: Alisher Navoiy, digitalization, manuscripts, modern technologies, scholarly research, digital archive, cultural heritage, information technology, online platform, globalization.

Аннотация:В данной статье рассматривается процесс цифровизации наследия Алишера Навои — переход от древних рукописей к современным цифровым форматам. Раскрываются научные и технологические аспекты этой работы, а также значение цифровизации для популяризации произведений Навои среди широкой общественности, особенно среди молодежи. Также обсуждаются перспективы глобального изучения наследия Навои через цифровые платформы.

Ключевые слова: Алишер Навои, цифровизация, рукописи, современные технологии, научные исследования, цифровой архив, культурное наследие, информационные технологии, онлайн-платформы, глобализация.

The manuscript tradition surrounding the works of Alisher Navoiy represents one of the richest legacies of Central Asian intellectual history. A master of the Chagatai language and a towering figure in the world of classical Persianate literature, Navoiy (1441–1501) created a corpus of poetry and prose that not only shaped Turkic literary traditions but also left a lasting imprint on cultural, philosophical, and religious discourse throughout the Islamic world. The journey of his works through manuscript transmission, preservation, copying, and scholarly engagement reflects both the reverence accorded to his genius and the evolution of

manuscript culture in the broader Islamic East. His literary legacy, handed down through carefully transcribed manuscripts, offers a window into how knowledge was preserved, transmitted, and revered long before the age of print. "Alisher Navoiy asarlarini raqamlashtirish jarayoni ularning keng ommaga yetib borishini ta'minlaydi, shu bilan birga, ularni asrab-avaylashda ham muhim vositaga aylanmoqda."[1]

One of the most remarkable aspects of the manuscript tradition of Navoiy's works is the early emergence of systematic copying and compilation. Unlike many other authors whose manuscripts were scattered and piecemeal, Navoiy's writings were often compiled into well-structured codices that followed specific organizational principles. This early codification facilitated the formation of a stable textual tradition and contributed to the consistent transmission of his oeuvre across regions and generations. "Elektron kutubxonalar orqali Navoiy g'azallari endi nafaqat O'zbekistonda, balki butun dunyoda o'qilmoqda."[2] In particular, the tradition of producing "majmuas" — anthologies that included selections of poetry or entire works — became common, allowing various segments of society to access and appreciate Navoiy's poetry.

The artistic quality of Navoiy manuscripts is another significant dimension of their historical journey. Many of the surviving copies, especially those produced in the 15th and 16th centuries, are masterpieces of book art. Script styles such as naskh, nastaliq, and shikasta were employed to render his verses in aesthetically pleasing forms. Illuminators and miniature painters contributed decorative motifs, floral designs, and occasionally narrative illustrations that reflected the content of the texts. These embellishments not only enhanced the visual appeal of the manuscripts but also underscored the high status of Navoiy's works in the cultural hierarchy of the time.

Beyond aesthetics, the manuscript tradition also served a pedagogical function. Navoiy's works were used as teaching materials in madrasas (Islamic schools) and literary circles. Commentaries, glosses, and marginal notes found in many manuscripts attest to the depth of scholarly engagement with his writings. In particular, his didactic poems such as "Mahbub ul-qulub" and philosophical prose like "Nasoyim ul-muhabbat" attracted attention from theologians and mystics, who found in them a synthesis of Sufi metaphysics, moral instruction, and linguistic artistry. Manuscripts thus became not only vehicles of preservation but also instruments of interpretation and intellectual discourse.

The geographic spread of Navoiy manuscripts further illustrates their historical reach. From Herat, where Navoiy lived and worked, his writings traveled across the Persianate world — to cities like Bukhara, Samarkand, Tabriz, Istanbul, Delhi, and even beyond. In each of these cultural centers, his texts were copied, studied, and integrated into local literary traditions. "Digitallashuv Navoiy merosini nafaqat saqlab qolmoqda, balki ularni yangi avlodlarga yaqinlashtirmoqda."[3] This movement across linguistic and cultural boundaries was facilitated by the prestige of the Chagatai language during the Timurid and post-Timurid periods, as well as the high regard in which Navoiy was held by later dynasties, including the Shaybanids, Mughals, and Ottomans. As a result, the manuscript tradition surrounding his works became a transregional phenomenon.

In the 17th to 19th centuries, the tradition of manuscript copying continued despite the advent of printing technology. In many parts of Central Asia and the Islamic world, hand-copied books remained the preferred medium for literary and scholarly texts. This was especially true for works considered sacred or culturally significant, such as those of Navoiy. Even as lithographic printing became more common in the 19th century, many communities

continued to produce handwritten copies of his poetry, often for ceremonial, pedagogical, or commemorative purposes. This ongoing practice reflects the manuscript's role not only as a textual artifact but also as a cultural and spiritual object.

The Soviet era posed significant challenges to the preservation and dissemination of Navoiy's manuscript legacy. Policies aimed at secularization, the suppression of Islamic education, and the marginalization of traditional cultural expressions led to the closure of many institutions that had preserved manuscripts. However, efforts by scholars, librarians, and cultural workers allowed many manuscripts to be saved, catalogued, and transferred to state archives and museums. "Bugun Navoiy asarlarini mobil ilovalar orqali o'qish imkoniyati mavjud — bu esa uni yoshlar orasida ommalashtirishda muhim qadam bo'ldi." [4] Institutions such as the Institute of Oriental Studies in Tashkent and the National Library of Uzbekistan became custodians of vast collections of Navoiy manuscripts, many of which were subjected to critical editions, facsimile reproductions, and scholarly analysis during the 20th century.

In the post-Soviet era, interest in Navoiy's manuscript heritage has grown significantly. With the resurgence of national identity in Uzbekistan and a renewed emphasis on cultural heritage, the study and restoration of his manuscripts have become a priority. Scholars now undertake philological comparisons between different manuscript copies to establish authoritative texts. Digital technologies have also begun to play a role, with several initiatives aimed at digitizing and disseminating Navoiy's works online. This process not only aids in preservation but also facilitates global access to his writings, allowing researchers, students, and admirers across the world to engage with his legacy.

Manuscripts of Navoiy's works are no longer viewed merely as old books; they are cultural treasures that embody the intellectual history of a civilization. Their physical characteristics — the calligraphy, marginalia, paper quality, binding, and colophons — provide historians with clues about the time, place, and purpose of their production. Each manuscript is a unique witness to the reverence Navoiy commanded and the networks through which his influence spread. "Navoiy g'azallarining raqamli versiyalari matnshunoslar uchun ham qulay platformaga aylangan."[5] As such, they form an essential part of Uzbekistan's national memory and the broader heritage of the Islamic world.

The manuscript tradition of Navoiy's works also raises important questions about authorship, authenticity, and interpretation. As texts were copied and recopied, variations inevitably arose. Scribal errors, deliberate emendations, regional preferences, and interpretive glosses all shaped how Navoiy was read and understood in different contexts. Modern textual scholars must sift through these variants to reconstruct the "original" text — a task that requires both linguistic skill and historical sensitivity. Yet this very multiplicity of readings also enriches our understanding of Navoiy, revealing how his work was adapted and reinterpreted over centuries.

In conclusion, the manuscript tradition of Alisher Navoiy's works is more than a story of preservation; it is a narrative of reverence, transmission, creativity, and resilience. From the scriptoriums of Herat to the libraries of modern-day Tashkent, his writings have journeyed across centuries and continents, continuously engaging readers and inspiring scholars. "Navoiy merosining PDF, ePub, va interaktiv formatlarga o'tkazilishi uning o'quvchilarini ko'paytirdi."[6] Each manuscript, whether ornately illuminated or modestly written, bears witness to the enduring power of his words and the devotion of those who sought to preserve them. In an age of digital texts and fleeting media, the survival and continued study of these

manuscripts serve as a reminder of the lasting value of literary heritage — and of the cultural memory embedded in ink, paper, and human care.

The arrival of the digital age has reshaped nearly every aspect of human life — from communication and commerce to education and culture. Among the most remarkable transformations has been the digitization of literary and historical heritage, a process that has allowed the treasures of the past to be accessed by the global public like never before. One of the most profound beneficiaries of this digital revolution is the legacy of Alisher Navoiy, the great 15th-century Central Asian poet, philosopher, and statesman. Once preserved only in fragile manuscripts and elite literary circles, Navoiy's works are now being reintroduced to the modern world through digital platforms, online archives, and virtual educational initiatives. The process of digitizing, interpreting, and globally sharing his vast and complex oeuvre has opened new possibilities for scholarship, cultural pride, and global appreciation.

Alisher Navoiy holds an iconic position in Uzbek and Turkic literature. As the first major author to elevate the Chagatai Turkic language to the level of high literary expression, he laid the foundations for a national and cultural identity rooted in linguistic pride. For centuries, his works were studied in madrasas, preserved in calligraphic manuscripts, and passed down as part of the classical tradition. However, the accessibility of his writings was often limited to those with formal training in classical languages and literature. The 21st-century digital revolution has dramatically expanded access to his heritage, democratizing knowledge and allowing his voice to reach new audiences.

One of the earliest and most impactful developments in this process was the digitization of Navoiy's manuscripts. Libraries and research institutions in Uzbekistan and beyond began scanning and uploading rare and ancient copies of his works, some of which date back to the 15th and 16th centuries. The Institute of Oriental Studies in Tashkent, the Alisher Navoiy National Library, and various universities have taken steps to preserve these documents in high-resolution digital formats. These efforts not only safeguard the physical manuscripts from deterioration but also allow scholars around the world to conduct detailed philological and comparative studies without being physically present in Central Asia. For the first time, Navoiy's works have become part of a global digital corpus of classical literature.

The digital dissemination of Navoiy's writings has also facilitated a revival of interest in his philosophical, ethical, and mystical ideas among younger generations. Through educational apps, e-books, websites, and interactive platforms, his poems and prose have been translated, annotated, and contextualized for modern audiences. Initiatives led by Uzbek institutions, in cooperation with international partners, have made it possible for students and enthusiasts to engage with his works through audio recordings, video lectures, and digital exhibitions. Many of these resources are bilingual, offering content in both Uzbek and English, thereby bridging cultural and linguistic divides. The use of social media platforms like Instagram, YouTube, and Telegram to share excerpts, reflections, and analyses of his works has further amplified his relevance among digital natives. "The possibilities for interpreting and comparatively studying Navoi's heritage have expanded through digitization."[7]

Another significant contribution of the digital revolution to Navoiy studies is the application of artificial intelligence and machine learning. Text recognition software has been developed to decipher and transcribe handwritten manuscripts, making it easier to create digital editions and searchable texts. Tools such as natural language processing (NLP) are being used to analyze the structure, themes, and vocabulary of his poetry, opening new perspectives in literary criticism. These technologies not only reduce the labor-intensive process of textual

analysis but also introduce innovative methods for exploring intertextuality, historical influence, and stylistic evolution in his writings.

Moreover, digital archives and libraries have turned into cultural bridges, connecting the Uzbek-speaking world with the global community of literary scholars. International digital humanities projects have begun to include Navoiy's works alongside those of other great world authors like Shakespeare, Dante, and Rumi. Such inclusion not only affirms the global value of his contributions but also challenges Eurocentric literary canons, highlighting the intellectual richness of the Turkic-Islamic tradition. Researchers from different parts of the world now have the ability to incorporate Navoiy into comparative literature curricula, publish international articles about his worldview, and present his influence within the wider scope of Renaissance and Sufi literature.

The digital revolution has also led to the re-illustration and reinterpretation of Navoiy's themes through visual and multimedia art. Artists, filmmakers, and digital creators have found inspiration in his mystical and humanistic poetry, producing animations, digital paintings, and short films that bring his allegorical stories to life. Online galleries and virtual reality projects allow users to step into the imagined worlds of his epic poems, such as those in his Khamsa. These new modes of storytelling not only make his work accessible to those less inclined toward traditional reading but also keep his artistic influence alive in creative and contemporary ways.

In addition, digital publishing has revolutionized the production and distribution of Navoiy's texts. While printed editions are still valued, online platforms now allow for open-access publication, crowdsourced translations, and collaborative annotation. This participatory model of literary preservation has enabled broader engagement from educators, students, and independent readers who might not have access to traditional academic institutions. Platforms such as Wikisource and Open Library now host full texts of Navoiy's poetry, encouraging public interaction with classical literature in a way that was once unimaginable.

Despite these advancements, challenges remain in fully bringing Navoiy into the 21st century. The language barrier continues to be a significant obstacle. While many of his works have been translated into modern Uzbek and Russian, comprehensive English translations are still limited. This restricts his global reach, especially among readers unfamiliar with Turkic languages. Furthermore, the complexity of his ideas and the deep intertextual references in his work require sensitive and scholarly-informed translations to capture the essence of his thought. There is a pressing need for international translation projects that combine linguistic precision with cultural literacy.

Another challenge involves the digital divide — the gap between those who have access to digital technology and those who do not. While urban centers in Uzbekistan and other countries are well-connected, many rural communities still lack reliable internet access. This limits the potential impact of digital Navoiy initiatives within the very regions that have historically cherished his legacy. Addressing this imbalance requires both technological investment and educational reform aimed at integrating digital literacy with cultural heritage.

Moreover, as with all digital content, there is a risk of misinterpretation, oversimplification, or even commercialization of Navoiy's work. The internet's speed and virality can sometimes prioritize aesthetic appeal over depth and accuracy. It is essential that digital representations of his work remain grounded in scholarship and respect the philosophical, historical, and spiritual contexts from which they emerged. Collaboration between scholars, technologists, and artists is crucial to maintaining the integrity of his legacy in the digital age.

Ultimately, the digital revolution offers unprecedented opportunities for reinvigorating the study and appreciation of Alisher Navoiy. It allows his timeless wisdom — grounded in love, justice, introspection, and moral responsibility — to be shared with a global audience that may be unfamiliar with his cultural background but is nonetheless searching for meaning in an age of rapid change. In making his works accessible, searchable, and engaging, digital technology has not diluted his voice but amplified it, allowing him to speak across centuries and continents.

Navoiy's entrance into the 21st century through digital innovation symbolizes more than technological progress; it represents a cultural renaissance. It reconnects modern Uzbek society with its historical roots while inviting the world to recognize the universal values embedded in his poetry. As technology continues to evolve, so too will the ways in which we engage with his work. Yet the essence of his message — one of compassion, wisdom, and spiritual awakening — remains as relevant today as it was over five centuries ago. In a world increasingly shaped by artificial intelligence and automation, the humanism of Alisher Navoiy, delivered through digital means, reminds us of the enduring power of words to inspire, unite, and transform.

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