

A Comprehensive Study of Akzhan Mashanov's Islamic Heritage and Its Impact on Historical Scholarship

Anara Shabambayeva,* Zdash Dukenbayeva,** Aigul Turlybekova,***
Zhazira Khassenova**** & Manash Talgatbek*****

Abstract

The relevance of the study is determined by the need for multifaceted examination and analysis of the extensive literary legacy of the Kazakh scientist and encyclopaedist Akzhan Mashanov. The purpose of the investigation is to summarise and analyse the historic heritage of Mashanov, and to highlight the main trends of the historical works of the scientist. The study employed both general scientific methods of analysis and synthesis, ascending from the abstract to the concrete and vice versa, notably, the descriptive method, the comparative method, and special methods of historiographical research, in particular, the comparative-historical method, critical analysis, as well as the method of discourse analysis. This study delves into A. Mashanov's writings concerning the history of science and explores his examinations of the life and contributions of the Islamic scholar Al-Farabi to modern science. The findings reveal that A. Mashanov's historical heritage is remarkably vast and diverse, extending well beyond the realm of Farabi studies. The theoretical significance of the study lies in broadening the discussion of the historic heritage of A. Mashanov, expanding knowledge about him, as well as further exploring aspects of his creative work and the multifaceted personality of the great scholar. The practical significance of the work lies in a thorough study of A. Mashanov's scientific findings as an encyclopaedic scholar, which could have an impact on subsequent research in various areas.

Keywords: History of science, scientific investigation, creativity, Islamic science, Farabi studies, philosophy

Introduction

Actually, the problem of studying a personality and his role in history is one of the leading questions in scientific research. Among such historical figures who were forgotten in the era of Soviet totalitarianism, one can name Akzhan Mashanov, whose historical works contributed to presenting al-Farabi and Abai's heritage to the world.

The outstanding Kazakh scientist and encyclopaedist A. Mashanov contributed significantly to various areas of scientific activity during his long life and left behind a rich historical heritage on various topics.¹ Being a geologist by training and the main scientific area of activity, A. Mashanov in his later years became intensively engaged in Arabic studies and went down in history as a "discoverer" of the great Islamic scholar and philosopher Abu Nasr Al-Farabi for Kazakhstan and the entire former Union of Soviet Socialist Republics (USSR). He is a pioneer of "Farabi studies". A. Mashanov studied Al-Farabi's work in the original and conclusively established that he was from the Kazakh town of Otrar, which in Arabic countries was called Farab.² Since then, Al-Farabi was often referred to as "the great ancestor" in Kazakhstan. A. Mashanov³ has proved that Al-Farabi's scientific views largely anticipated

* Anara Shabambayeva (corresponding author), Department of History of Kazakhstan, Toraighyrov University, 014000, 64 Lomov Str., Pavlodar, Republic of Kazakhstan. Email: anara.sh110@gmail.com.

** Zdash Dukenbayeva, Department of History of Kazakhstan, L.N. Gumilyov Eurasian National University, 010008, 11 Pushkin Str., Astana, Republic of Kazakhstan.

*** Aigul Turlybekova, Department of History of Kazakhstan, Toraighyrov University, 014000, 64 Lomov Str., Pavlodar, Republic of Kazakhstan.

**** Zhazira Khassenova, Department of History of Kazakhstan, L.N. Gumilyov Eurasian National University, 010008, 11 Pushkin Str., Astana, Republic of Kazakhstan.

***** Manash Talgatbek, Department of Medieval Universal History, University of Szeged, 6720, 2 Egyetem Str., Szeged, Hungary.

¹ Gulzhan Shashkina et al., "Flower representations in the lyrics of A.A. Fet," *Open Cultural Studies* 9, no. 1 (2025): 20250047; Tynysbek Kongyratbay et al., "Study of the heritage of Korkyt in the Turkic world," *Asian Social Science* 11, no. 21 (2015): 55-61; Tynysbek Kongyratbay, "Once again about the epic heritage of Korkut," *Eposovedenie* 2022, no. 2 (2022): 28-39.

² Marzhan Nurpeisova, "Akzhan Mashanov – Scientist Miner and Researcher of the Heritage of al-Farabi," accessed March 13, 2025, <https://cutt.ly/1JvjaKr>.

³ Akzhan Mashanov, "On the Study of the Heritage of Al-Farabi," *Bulletin of the Academy of Sciences of the KazSSR*, 5 (1961): 67-89; Akzhan Mashanov, "Study of the Works of Farabi in Kazakhstan," in *Return of the teacher. About the life and work of Farabi* (Alatau, 1975), 89-94; Akzhan Mashanov, *Al-Farabi and Abai* (Alatau, 1994), 26-39; Akzhan Mashanov, *Al-Farabi and Modern Science* (Al-Mashani International Public Foundation, 2007), 44-49.

later discoveries, often attributed to European scientists. Through the efforts of A. Mashanov an international scientific conference dedicated to the 1100th anniversary of Al-Farabi was held in 1972 in Almaty, the then capital of the Kazakh SSR.⁴

A. Mashanov also was a writer and populariser of science. He is the author of various scientific, popular science and fiction works, dedicated both to the personality of Al-Farabi and to the history in general, as well as to the past and great figures of the Kazakh people. A. Mashanov used to sign his works as Akzhan Al-Mashani, following the Islamic written tradition.⁵ Among A. Mashanov's⁶ publications are "On the study of the heritage of al-Farabi," "The Aristotle of the East," "The Great Scientists of Central Asia and Kazakhstan," "Al-Farabi and Abai," "Al-Farabi and modern science," "Al-Farabi's Calculation".

The scientist paid much attention to the description of the archaeological monuments of Kazakh writing. All these works can be attributed to historical discourse, as they reproduce "a stable image (or mental model) of a historical event".⁷ In those historical discourses, events related to the 15th-16th centuries are considered as well as the image of the medieval thinker al-Farabi is described.⁸ Thus, the recently increased interest in the multifaceted personality of A. Mashanov, his versatile scientific activity, as well as his extensive historic heritage generates the relevance of study and analysis of his work. Much of A. Mashanov's work remains unexplored or poorly researched. In Soviet times, certain aspects of the work of A. Mashanov, first of all, those associated with Islam, were not widely publicised. Therefore, an in-depth study of the historic heritage of A. Mashanov represents a scientific novelty.

This study aims to analyse and summarise the historic heritage of A. Mashanov, and to highlight the main trends of the historical works of the scientist. In order to achieve the objective, the following tasks are set: to provide a scholarly assessment of the historic heritage of A. Mashanov; to determine the scientific significance of his works. To achieve this goal, the following objectives are established: to provide a scholarly evaluation of A. Mashanov's historical contributions and to ascertain the scientific significance of his body of work.

Materials and Methods

The study employed both general scientific methods of analysis and synthesis, ascending from the abstract to the concrete and vice versa, notably, the descriptive method, the comparative method, and special methods of historiographical research, in particular, the comparative-historical method, critical analysis, and the method of discourse analysis. The descriptive method, as one of the most commonly used methods in science, proves to be useful as it enables the creation of a research base through data collection, primary analysis, and presentation.⁹

Through the descriptive method, data were collected on the body of work, and his writings in various scientific disciplines and relevant data were analysed and summarised. The descriptive method served to create an overview of the works that make up the historic heritage of A. Mashanov, to compile their general characteristics and analyze the content of the works. The comparative method, as an empirical method and one of the general scientific research methods, made it possible to classify the works of A. Mashanov, to conduct their typology and assess their significance.

Bibliographic method is used to analyze the history of publications, scientific papers, books, and other sources that indicate the activity and work of A.J. Mashanov. This method allows us to trace the development of his scientific contribution and his change of professional direction from geology to

⁴ Rustem Samataev and Kazbek Tleubergenov, "The Man Who Returned the Mugalim Sled to the World," accessed March 13, 2025, <https://www.ihsan.kz/ru/articles/view/8659>.

⁵ International news agency "KazInformation," "Akzhan Mashani found Al-Farabi's grave," accessed March 13, 2025, https://www.inform.kz/kz/al-farabidin-ziratyn-tapkan-akzhan-mashani_a2477128.

⁶ Akzhan Mashanov, "On the Study of the Heritage of Al-Farabi," 67-89; Akzhan Mashanov, "Study of the Works of Farabi in Kazakhstan," 89-94; Akzhan Mashanov, "Al-Farabi and Abai," 26-39; Akzhan Mashanov, "Al-Farabi and Modern Science," 44-49.

⁷ Margarita Ponomareva, "The originality of historical discourse in N. A. Polevoy's Novel "The Oath at the Holy Sepulcher," *Yaroslavl Pedagogical Bulletin* 4, no. 1 (2010): 243-247; Vita Boiko and Serhii Kuleshov, "Movable monuments of history and culture in the state register of national cultural heritage: a comparative analysis," *Society. Document. Communication* 19 (2023): 60-80.

⁸ Samal Nukezhanova, Maira Dyussebekova, and Vsevolod Zelenin, "Mythodesign in modern Kazakh realities: State and development prospects," *Comparative Sociology* 23, no. 2 (2024): 216-239.

⁹ Gulzhan Shashkina et al., "Flower representations in the lyrics of A.A. Fet," *Open Cultural Studies* 9, no. 1 (2025): 20250047.

philosophy and other fields. The microhistorical method is used to study specific events, individuals, and the context that surrounded Mashanov's work. This method helps to take into account the historical and social context that influenced the formation and development of his scholarship.

The comparative method helped to realize the scale of A. Mashanov's contribution to different areas of scientific activity and to understand the versatility of his personality and the encyclopedic knowledge of the scientist. The comparative-historical method, as being one of the special methods, made it possible to determine the extent of A. Mashanov's achievements in various sciences about the historical era in which he lived. This method, by comparing the general and special historical phenomena of the epoch, made it possible to determine the uniqueness of the personality of A. Mashanov and his scientific works in comparison with the achievements and general scientific ideas of his contemporaries. The method of critical analysis is one of the oldest methods of examining texts not literally, but rather by looking at them from a critical point of view, picking out the grains that make up the factual basis of the text. The method of critical analysis consists of initially extracting credible information through critical analysis and then reconstructing reality based on the data. Using this method, one should consider the historical context and circumstances in which this text was created. It is also necessary to consider the identity of the author of the text, his background, and his beliefs to better understand what he wanted to convey to his readers through his work.

Discourse analysis, which is a critical inquiry and a specific method of analyzing discourse, involves a critical approach to general knowledge about the visible world, the historical conditioning of understanding and representation, and the relationship between knowledge and social processes, and social behavior.¹⁰ Discourse analysis suggests consideration of the political, economic, and cultural information of the era in which the text under analysis was written, and the influence of social issues and ideology on the author of the text. A. Mashanov lived in a difficult Soviet era, when the official ideology of the state was Marxism-Leninism, and he was a Kazakh patriot and a devout Muslim. This inner contradiction between the author and the context of the historical time in which the scholar had to live should always be taken into account when analyzing his literary legacy.

Results

The scientist was born on November 2, 1906, on the territory of the present Karakarlinsky district of the Karaganda region of Kazakhstan. A. Mashanov belonged to a well-known family, his grandfather was Biya Mashan, who headed the Karakesek clan of the Argyn tribe of the Middle Zhuz. Biya Mashan was well known and remembered by the Kazakh people. He became the prototype of Masanbi in the novel "Nomads" by Ilyas Yesenberlin. "When else will a boy like Mashan be born?" exclaimed Zhamantai after the death of the Biya.¹¹ His grandson became a worthy heir of the famous grandfather. A. Mashanov had to live in an uneasy 20th century. His youth fell at a crucial revolutionary time of change. Biya's grandson A. Mashanov has chosen the profession of a miner. After studying at Karakarli pedagogical college and first working as a village teacher, in 1934 A. Mashanov enrolled at the Kazakh Mining and Metallurgical Institute in Almaty, graduating with honors in 1939, as a mining engineer-geologist. After graduation, A. Mashanov also entered graduate school, becoming the first graduate student of Al-Farabi Kazakh National University, In 1943 defended his thesis on "Structure of Turgay ore field," which became one of the first profound scientific works of A. Mashanov. Since 1946, A. Mashanov has been a corresponding member of the Academy of Sciences of the Kazakh SSR, which was established with his direct participation.¹² That same year A. Mashanov defended his PhD thesis on the subject of «Geometric methods for studying the structure of the ore fields» at the Moscow Geological Exploration Institute. His scientific work was conducted at the intersection of three sciences: geology, mechanics, and mining.¹³ In geological science, A. Mashanov is considered the founder of the Kazakh School of Geomechanics.¹⁴

The year 1943 was a turning point in A. Mashanov's life. It was during this time that he met Ernest Kolman, a prominent Soviet scientist, a member of the Czechoslovak Academy of Sciences, and director of the Institute of Philosophy of the Czechoslovak Academy of Sciences, who was in

¹⁰ Marianne W. Jørgensen and Louise J. Phillips, *Discourse Analysis. Theory and Method* (Humanitarian Center, 2008), 30-46.

¹¹ Rustem Samataev and Kazbek Tleubergerov, "The Man Who Returned the Mugalim Sled to the World."

¹² Burkitbay Ayagan, "Kazakhstan," in *National Encyclopedia* (Kazakh Encyclopedia, 2005), 503-504.

¹³ Marzhan Nurpeisova, "Akzhan Mashanov – Scientist Miner."

¹⁴ Burkitbay Ayagan, "Kazakhstan," 503-504.

evacuation in Almaty. He introduced A. Mashanov to the work of the 9th-century Islamic philosopher and scholar Abu Nasr Al-Farabi, who lived in Syria in his later years and wrote in Arabic. A. Mashanov found it interesting that according to E. Kolman, Al-Farabi was born in the Kazakh town of Otrar, then known in the Arab world as Farabom. After discussions with E. Kolman, A. Mashanov set a goal to study Al-Farabi's works and personality more deeply, and to do so he decided to study Arabic to get acquainted with Al-Farabi's works in the original. Already established as a prominent geologist, A. Mashanov decided to devote his future life to the study of Al-Farabi's works to reveal the name of this scientist to the Kazakh people and prove his importance to Kazakhstan. Throughout the 1950s and 60s, A. Mashanov studied Arabic and Persian and made requests to libraries in Berlin, Lisbon, Cairo, and Madrid to search for the original texts of Al-Farabi's works. In 1968, A. Mashanov visited Damascus, where he found Al-Farabi's tomb, and brought a handful of earth from there to his native Kazakhstan.¹⁵

A. Mashanov's family background and early life experiences played a significant role in shaping his academic interests and pursuits. A. Mashanov hailed from a well-known family, and his grandfather, Biya Mashan, was a respected figure within the Kazakh community. His family's reputation and heritage likely instilled in him a sense of pride and responsibility to contribute to his community and society at large. This heritage may have fueled his ambition to make meaningful contributions in various fields.

Despite growing up in a time of significant social and political change, A. Mashanov had access to educational opportunities. He attended Karakarli Pedagogical College and later pursued higher education in geology. These early educational experiences likely nurtured his intellectual curiosity and provided the foundation for his later academic pursuits. Transition to Mining and Geology: After working as a village teacher, A. Mashanov decided to transition to the field of mining and geology. This shift may have been influenced by the region's economic landscape and the demand for professionals in geological sciences. It was a pivotal decision that laid the groundwork for his career in geology.

Despite the challenges posed by Soviet-era restrictions on religion, A. Mashanov remained committed to his Muslim faith. This commitment is evident in his works related to Islam and religious foundations, where he navigated the delicate balance between his beliefs and state-imposed atheism. A. Mashanov's family background and early experiences seem to have instilled in him a curiosity that extended across various disciplines. This curiosity led him to explore diverse fields, including geology, philosophy, literature, and science communication. His ability to synthesize knowledge from these diverse areas contributed to his multidisciplinary approach. In summary, A. Mashanov's family background provided a foundation of pride and responsibility, while his early life experiences, educational opportunities, and encounters with influential figures guided his academic journey. His transition to geology, introduction to Al-Farabi, commitment to Islam, and diverse academic interests collectively influenced the trajectory of his scholarly pursuits, making him a multifaceted and pioneering figure in Kazakh intellectual history.

Starting in 1961, A. Mashanov published a series of works on Al-Farabi, gradually introducing the name of this Islamic scholar into the scientific discourse of Soviet Kazakhstan. A. Mashanov initiated an international scientific conference in Almaty dedicated to the 1100th anniversary of Al-Farabi, which took place in 1972. Apart from Almaty, Tashkent was a contender for the right to hold such a conference, but A. Mashanov insisted that the conference should be held in Kazakhstan. He later said that if he had started working on Al-Farabi 3-4 years later, Uzbekistan would have taken the lead in studying his legacy. A. Mashanov had to face opposition to his efforts. First of all, Al-Farabi's philosophy, built based on Islamic religion, contradicted the doctrine of Marxism-Leninism accepted in the USSR. A. Mashanov had to literally push his way for Al-Farabi in Soviet Kazakhstan. There is a well-known case of a party official arguing with a scientist about Al-Farabi, claiming that "that man in a turban cannot be Kazakh".¹⁶ In the last years of his life, A. Mashanov^{17,18} continued to study the philosophy of Al-Farabi. He wrote "Al-Farabi and Abai" and "Al-Farabi and modern science". He also published several works on the general history of science, and the popularisation of scientific knowledge, along with fiction books. A. Mashanov died in Almaty in 1997.¹⁹ A. Mashanov's scientific

¹⁵ Rustem Samataev and Kazbek Tleubergenov, "The Man Who Returned the Mugalim Sled to the World."

¹⁶ Marzhan Nurpeisova, "Akzhan Mashanov – Scientist Miner."

¹⁷ Akzhan Mashanov, "Al-Farabi and Abai," 26-39.

¹⁸ Akzhan Mashanov, "Al-Farabi and Modern Science," 44-49.

¹⁹ Mining Research Group, "Akjan al-Mashani," accessed March 13, 2025, <https://cutt.ly/BJvzPjE>.

A Comprehensive Study of Akzhan Mashanov's Islamic Heritage and Its Impact on Historical Scholarship heritage is very extensive. During his scientific activity, more than 200 scientific articles, 10 monographs, 5 textbooks, and 8 popular scientific books were published. In total, over 350 works were written by A. Mashanov, which are now available in a 16-volume collection of his works.²⁰

A. Mashanov, the scholar, approached the personality of al-Farabi within the broader context of world historical science and its intersection with the history and culture of Kazakhstan. He conducted comprehensive research into al-Farabi's life and work, emphasizing the global significance of this Islamic scholar. A. Mashanov highlighted how al-Farabi's contributions to philosophy, science, and culture had a profound impact on the development of human knowledge and civilization, transcending geographical and temporal boundaries.²¹ In particular, A. Mashanov's studies delved into al-Farabi's philosophical and scientific works, demonstrating how they anticipated and influenced later discoveries and developments in various fields. He portrayed al-Farabi as a pivotal figure in the history of thought, emphasizing the enduring relevance of his ideas. Furthermore, A. Mashanov sought to underscore al-Farabi's connection to Kazakhstan, asserting that the great scholar was originally from the Kazakh town of Otrar, known as Farab in the Arab world. By establishing this historical link, A. Mashanov aimed to emphasize al-Farabi's significance to Kazakhstan's cultural heritage and national identity.

Important to delve further into the context of government censorship and restrictions on studying Islamic topics during the era in which A. Mashanov lived and conducted his research. The Soviet Union, where A. Mashanov lived and worked, had a complex relationship with religion, including Islam. Government censorship was a pervasive reality, and the study of religious topics, particularly Islamic studies, was subjected to strict control and limitations. During this period, the Soviet authorities promoted atheism and discouraged religious practices and studies. Islamic institutions and scholars were closely monitored, and religious gatherings were often regulated or suppressed. Many religious texts and teachings were prohibited or censored.

A. Mashanov's ability to navigate this environment is indeed noteworthy. He managed to pursue his research on Islamic topics, particularly the works of Al-Farabi, in a climate where such studies were challenging and could even be perceived as subversive by the state. A. Mashanov's approach to his work, his choice of pseudonyms following Islamic traditions, and his ability to present his findings in a way that aligned with the state's ideology likely played a role in allowing him to continue his scholarly pursuits. Incorporating these details into the discussion will provide a more comprehensive understanding of the challenges A. Mashanov faced and the strategies he employed to continue his research on Islamic topics despite government restrictions and censorship.

The extensive scientific heritage of A. Mashanov can be divided into several blocks. First of all, these are scientific works concerning the original sphere of scientific activity of A. Mashanov – geology. In particular, the monograph “Fundamentals of a New Methodology for Studying the Structure of Ore Fields,” published in 1946, has become a synthesis of A. Mashanov's scientific study in geology in the course of 1930s - 1st half of 1940s. At the same time A. Mashanov wrote a monograph “The Structure of the Earth,” the foreword to which was written by Kanysh Satpayev, the president of the newly created Academy of Sciences of the Kazakh SSR, who helped A. Mashanov in his scientific investigations.

Later A. Mashanov wrote some more scientific works, which became fundamental in geomechanics: “The Mechanics of an Array of Rocks,”²² “Stability of Ledges and Boards of Open Pits in the Karatau Basin” (in collaboration with A. Pevzner and Sh. S. Bekbasarov), “Fundamentals of Geomechanics of Fractured Rock Formations”. According to M. Nurpeisova,²³ A. Mashanov's works on geomechanics “were approved and recognized abroad and published in the German language in the motherland of the surveying science – Germany”. Among the general scientific works of A. Mashanov on geology should be mentioned: “How Mountains Were Formed,” and “Geometrical Methods of Studying Ore Fields”.

²⁰ Rustem Samataev and Kazbek Tleubergenov, “*The Man Who Returned the Mugalim Sled to the World*”; Marzhan Nurpeisova, “*Akzhan Mashanov – Scientist Miner*”; Osnat Atias et al., “Meaningful Participation of Schools in Scientific Research through Contributory Citizen Science Projects,” *Science Education* 107 (2023): 1163-1192.

²¹ Oleg Bazaluk and Olga Nezhlyva, “Martin Heidegger and fundamental ontology,” *Analele Universitatii din Craiova, Seria Filozofie* 38, no. 2 (2016): 71-83.

²² Akzhan Mashanov, “On the Study of the Heritage of Al-Farabi,” 67-89.

²³ Nurpeisova, “*Akzhan Mashanov – Scientist Miner and Researcher of the Heritage of al-Farabi*.”

Besides exceptionally scientific works on geology, A. Mashanov wrote several textbooks on this science, in particular, his textbook “Crystallography, Mineralogy and Petrography,” published in 1969, was the first textbook on these sciences in the Kazakh language.²⁴ He is also the author of “Terminological Russian-Kazakh Dictionary: Geology, Mining, and Metallurgy,” published in 1950, and textbooks “Fundamentals of Mining Mechanics” and “Geomechanics”.²⁵ The efforts of A. Mashanov as a translator should also be noted. At that time when there were no geology textbooks in Kazakh, A. Mashanov translated from Russian into Kazakh I.V. Mushketov’s textbook “Short Course in General Geology” and the textbook “Geology and Mineralogy,” written by the group of authors headed by I. Potemkin.²⁶ The next significant unit of A. Mashanov’s historic heritage is his scientific works devoted to Al-Farabi, which gave an impetus to the development of Farabi studies in Kazakhstan. The first scientific study of A. Mashanov in this area was the article “On the Study of the Heritage of Al-Farabi,” published in the Bulletin of the Academy of Sciences of the Kazakh SSR. In the following years A. Mashanov published one after the other research works, which reveal the personality of Al-Farabi, his importance for world science, as well as his relevance to the history and culture of Kazakhstan: “On the Translation of Al-Farabi’s Work into Kazakh,” “Aristotle of the East,” “Calculus of Al-Farabi,” “Cosmology of Al-Farabi”.²⁷

Another important unit of A. Mashanov’s²⁸ historic heritage is his pop science books. With their help, A. Mashanov wished to introduce Al-Farabi to a wider circle of readers, as well as to popularise scientific knowledge among the population. Some of his popular science works are dedicated to the personality of Al-Farabi. Among such books is “Al-Farabi and modern science,” published after the author’s death. A. Mashanov also touches on the personality of Al-Farabi in his summary pop-science book “Great Scientists of Central Asia and Kazakhstan”.

For the 150th anniversary of Abai, A. Mashanov²⁹ published a treatise “Al-Farabi and Abai,” which to some extent can also be classified as a popular scientific unit of the historic heritage of A. Mashanov. In this work, the scientist used the historical discourse “confrontation of two historical figures”. Thus A. Mashanov revealed correspondences in the works of al-Farabi and Abai. A. Mashanov’s views and research interests evolved significantly over the course of his career, reflecting a dynamic intellectual journey that spanned multiple periods and areas of expertise. Analyzing this evolution helps us understand the shifts in his scholarly focus and contributions to various fields.

At the outset of his career, A. Mashanov’s primary area of expertise was geology. His early works, such as “Structure of Turgay Ore Field,” demonstrated his dedication to geological research. During this period, he made substantial contributions to understanding the Earth’s structure and geological formations.³⁰ The pivotal turning point in A. Mashanov’s career occurred when he encountered the works of the Islamic philosopher Al-Farabi. Meeting Ernest Kolman, who introduced him to Al-Farabi’s legacy, led A. Mashanov to delve into the study of this ancient scholar. His early works on Al-Farabi, like “On the Study of the Heritage of Al-Farabi” and “Aristotle of the East,” marked the beginning of his exploration into the world of Islamic philosophy and its connections to the history of Kazakhstan.

A. Mashanov’s interest in Al-Farabi continued to grow, leading to a series of publications that expanded Farabi’s studies in Kazakhstan. His works during this period, including “Cosmology of Al-Farabi,” showcased his deepening insights into the philosopher’s contributions to various fields of science and philosophy. A. Mashanov’s dedication to this topic extended to organizing the international conference commemorating the 1100th anniversary of Al-Farabi, reinforcing his role as a pioneer in Farabi studies. A notable feature of A. Mashanov’s later career was his interdisciplinary approach. He ventured into geomechanics, combining his geological expertise with mechanics and mining in works like “The Mechanics of an Array of Rocks” and “Stability of Ledges and Boards of Open Pits.” This interdisciplinary perspective allowed him to address complex scientific questions with a holistic

²⁴ Marzhan Nurpeisova, “Al-Mashani Asain Matani,” *Dertka Daua* 2017-April (2017): 7-12.

²⁵ Burkitbay Ayagan, “Kazakhstan,” 503-504.

²⁶ Mining Research Group, “Akjan al-Mashani.”

²⁷ Gaukhar Konayeva et al., “Al-Farabi’s Teaching About the Head of a Virtuous City in the Context of Modern Kazakhstan,” *Acta Baltica Historiae et Philosophiae Scientiarum* 8, no. 1 (2020): 96-106.

²⁸ Akzhan Mashanov, “Al-Farabi and Modern Science,” 44-49.

²⁹ Akzhan Mashanov, “Al-Farabi and Abai,” 26-39.

³⁰ Burkitbay Ayagan, “Kazakhstan,” 503-504.

A Comprehensive Study of Akzhan Mashanov's Islamic Heritage and Its Impact on Historical Scholarship viewpoint.³¹ In parallel with his scholarly pursuits, A. Mashanov undertook the task of popularizing scientific knowledge. His pop-science books, including “Mysteries of the Earth” and “Volcanism,” aimed to bring scientific concepts to a broader audience. These works showcased his ability to communicate complex ideas in an accessible manner. Despite the challenges of addressing religious topics in the Soviet era, A. Mashanov’s interest in the foundations of Islam remained undeterred.

A. Mashanov’s contributions and approaches to scholarship during his time period can be compared and contrasted with those of other Kazakh and Central Asian scholars and thinkers. While he made unique contributions to various fields, including geology, Farabi studies, and the popularization of science, it is essential to examine how his work aligns with or diverges from the endeavors of his contemporaries.³² A. Mashanov shared an interest in Islamic philosophy, particularly the works of Al-Farabi, with other Central Asian scholars of his time. They collectively sought to explore the contributions of Islamic scholars to various fields of science, philosophy, and culture. A. Mashanov adopted a multidisciplinary approach to his research. He combined geological expertise with philosophy, geomechanics, and literature, mirroring the interdisciplinary tendencies of scholars in the region. A. Mashanov, through his work on Al-Farabi, aimed to promote the recognition of indigenous scholars from Central Asia. This aligns with the efforts of other scholars in the region who sought to highlight the intellectual heritage of Central Asia.

Other similar works by A. Mashanov explain various aspects of geological science in simple language. Among them are: “Mysteries of the Earth,” “Volcanism,” “Earthquakes,” “How Life Appeared on Earth” and “By the Charming Fire”. In the last years of his life, A. Mashanov wrote several popular works devoted to questions of the structure of space, in particular, “The Lunar Lion”.³³

Some of the scientific and popular scientific works of A. Mashanov touch upon the foundations of Islam. Tackling this subject during the Soviet era was not easy, as at the time the state was pursuing a policy of combating religion, which was described as nothing less than “opium for the people”. Nevertheless, A. Mashanov remained a devout Muslim. In his opinion, Islam is a profound concept, requiring comprehensive education and high humanism. In addition to scientific literature, A. Mashanov is also the author of some fiction books, which constitute another significant unit of his literary heritage. A. Mashanov has been called the founder of the science fiction genre in Kazakh literature.^{34,35} One of A. Mashanov’s first such works is the novel “Journeys into the Subsoil of the Earth,” published in 1957. Among the fiction writings, A. Mashanov also has a historical-documentary novel “Al-Farabi,” published in 1971. It should be noted that his interest in historical research was not an amateur hobby, but a real study that made a significant contribution to the development of Farabian studies on Kazakh land.

Discussion

A. Mashanov has students and followers who further elaborate his ideas, continue to study Al-Farabi, research his literary heritage, and publish the scholar’s works. At present, there is an International Public Foundation “Akzhan Mashani” headed by A. Mashanov’s student Sh. Abdiraman.³⁶ Under his leadership, 16 volumes of A. Mashanov’s works were published in the 21st century. The collection also includes those works of the scientist that were not published during his lifetime, such as “Al-Farabi and Modern Science”.³⁷ It can be concluded that Sh. Abdiraman³⁸ is one of the first systematizers, collectors, and in-depth researchers of the historic heritage of A. Mashanov. Sh. Abdiraman³⁹ spoke about A. Mashanov’s scientific quest, the history of writing and publishing the book “Al-Farabi and Abai,” the first reader of which, claimed Sh. Abdiraman was himself. “There is no doubt that the theme of Al-

³¹ Konrad Talmont-Kaminski and LeRon F. Shults, “Modern Religion as Vestigial Structure: An Evolutionary Account of Secularization,” *Religion* 54, no. 2 (2024): 330-332.

³² Raikhan Doszhan, “The Question of Being in Al-Farabi’s Legacy and its Succession to Modern Science,” *Interdisciplinary Cultural and Humanities Review* 1, no. 1 (2022): 40-44.

³³ Marina Erokhina, “Historical Personality: Modern Methods of Study,” *Teaching History at School* 7 (1996): 50-52; Marfuga Shapiyan, “How Akzhan Mashani Returned al-Farabi to the Kazakhs,” accessed March 13, 2025, <https://cutt.ly/xJvnQAy>.

³⁴ Marzhan Nurpeisova, “Akzhan Mashanov – Scientist Miner.”

³⁵ Marian Burchardt and Johannes Becker, “Subjects of God? Rethinking Religious Agency, Biography, and Masculinity from the Global South,” *Historical Social Research* 48, no. 4 (2023): 131-155.

³⁶ Shamshi Abdiraman, “Did Abai Know al-Farabi?” accessed March 13, 2025, <https://cutt.ly/6Jvn7Rq>.

³⁷ Marzhan Nurpeisova, “Akzhan Mashanov – Scientist Miner.”

³⁸ Shamshi Abdiraman, “Did Abai Know al-Farabi?”

³⁹ Shamshi Abdiraman, “Did Abai Know al-Farabi?”

Farabi and Abai was consistently growing in A. Mashanov's heart before the book was published, – recalls Sh. Abdiraman. – Did Abai was familiar with Al-Farabi, a study that reveals the spiritual connection between these two Kazakh figures. The beginning follows from the question. First time I have heard accurate proof of the key idea that motivated me to write this piece”.

Another student of A. Mashanov, who studies his biography and scientific heritage, and popularises the personality of A. Mashanov in modern Kazakhstan is M. Nurpeisova,⁴⁰ doctor of technical sciences, professor of the Satpayev University. This researcher continues the work of A. Mashanov in geological science and speaks of the importance of his efforts in various spheres. According to M. Nurpeisova, some aspects of A. Mashanov's scientific heritage, such as his works on Islamic studies, have not yet been well-researched. Speaking about the encyclopedic nature of knowledge A. Mashanov, M. Nurpeisova asserts: “The range of interests of the scientist was surprisingly wide – he conducted in-depth studies in geomechanics – a new branch of mining sciences, wrote textbooks on geological disciplines in Kazakh, compiled Russian-Kazakh dictionary of mining and geological terms, wrote science fiction works, studied heritage of Al-Farabi, popularised science.”

As one of the pioneers of Farabi studies, the man who brought back the name of Al-Farabi to Kazakhstan, as well as a devout Muslim and a highly moral person, A. Mashanov was praised by R. Samataev and K. Tleubergenov. The authors point out that in his later works, A. Mashanov constantly refers to the Almighty, “by doing so he resembles scholars of past centuries”. The authors emphasize the need to popularise the name of A. Mashanov and the need for further, deeper study of his work. “Akzhan Al-Mashani is mostly known in academic circles. Although everyone should know who gave a great impetus to the development of natural sciences and humanities in our homeland at the end of the last century, bringing them to the international standard!”. The authors stress the need for further in-depth study of A. Mashanov's literary legacy and its popularisation. “Understanding the world of Akzhan Al-Mashani, analyzing his creative activity, and determining scientific results requires from the researcher the same purity of thoughts, spiritual training and endless knowledge with which he studied the legacy of the great scholar of all times, and only owing to him, the name of Abu Nasir Al-Farabi shone in all its splendor, making all before and after him dim, along this way Akzhan Al-Mashani himself has risen,” they say.

Among the researchers of the historic heritage of A. Mashanov should also be mentioned K. Bokaev.⁴¹ He explores the personality of the scientist from the perspective of Farabi studies. Author covers the development of A. Mashanov's works devoted to Al-Farabi, in his opinion, through these works A. Mashanov initiated the study of philosophy and scientific knowledge of the medieval Islamic scholar. In fact, A. Mashanov became the first Farabi studies expert in Kazakhstan. Another author, Zh. Imazhinova,⁴² mostly speaks about the moral life of A. Mashanov, his ancestors, and the extraordinary personality of the scientist, about the circumstances that determined his contribution to science and the range of scientific interests. Among the biographers and researchers of A. Mashanov's work is the rector of Al-Farabi Kazakh National University G.M. Mutanov,⁴³ a Kazakh scholar and poet who personally knew and worked with A. Mashanov. Author published a detailed biography of A. Mashanov, which outlines his life journey and the most important scientific achievements of the scientist and systematized the works of A. Mashanov, focusing on the Farabi study aspect of his scientific activities. Thus, the personality of A. Mashanov is well known in academic circles of Kazakhstan. A. Mashanov has a school of students who continue his work, popularising his name, systematizing his literary heritage, and publishing his works. This study gives a brief overview of A. Mashanov's writings on a variety of topics. For the first time, an attempt is being made to divide the scientific heritage of A. Mashanov into several units, thus clarifying which areas of science A. Mashanov devoted most of his writings.

Naturally, a significant part of A. Mashanov's scientific heritage is represented by scientific works on mining engineering and geomechanics. “By profession, A. Mashanov is a geologist, but he is not only a geologist, and geodesist but also a person, who laid the foundation of paleontology, mineralogy, crystallography, stratigraphy in Kazakhstan, became one of the founders of a new science of the earth – geomechanics” – these words can quite rightly be used to outline the circle of natural science interests

⁴⁰ Marzhan Nurpeisova, “Al-Mashani Asain Matani,” 7-12; Marzhan Nurpeisova, “*Akzhan Mashanov – Scientist Miner*”.

⁴¹ Kuanbek Bokaev, “Al-Farabi and Akzhan Mashani,” *Nation*, 12, no. 1 (2012): 8-15.

⁴² Zhadira Imazhinova, “Who Was Akzhan Mashani, What Kind of Life Did She Leave?” *Ak Zhelken* 12 (2014): 10-12.

⁴³ Galimkair Mutanov, *Mashanov Akzhan* (Kazakh University, 2017), 71-82.

A Comprehensive Study of Akzhan Mashanov's Islamic Heritage and Its Impact on Historical Scholarship of A. Mashanov.⁴⁴ Having taken up the study of Al-Farabi's work, A. Mashanov devoted most of his later scientific works to this scientist. A. Mashanov not only wrote scientific and popular scientific works but also a historical novel about Al-Farabi, which was published in 1971. Modern Farabi studies experts from Kazakhstan and other countries often use the developments of A. Mashanov in their investigation. A smaller part of A. Mashanov's historic heritage concerns those areas he studied in his declining years. This unit includes works on the Islamic religion. This part of A. Mashanov's historic heritage is yet to be thoroughly researched. Overall, A. Mashanov has made significant contributions to a wide variety of sciences and has also written several fiction pieces in the genres of science fiction and historical fiction.⁴⁵

In addition to systematizing the historic heritage of A. Mashanov, and highlighting its key themes and groups of units, this study analyses the main messages given by the scholar in his writings. Due to the versatility of A. Mashanov's scientific activities and the vastness of his scientific heritage, this study cannot cover all his works. The study analyses some later works of A. Mashanov, which deal with the personality of Al-Farabi and their history. It attempts to determine how A. Mashanov viewed the personality of Al-Farabi in the context of world historical science, as well as the history and culture of Kazakhstan. His multifaceted scientific activity and encyclopedic knowledge resulted in voluminous publications that cross scientific disciplines such as geology, history, geometry, cosmology, philology, physics, philosophy, and even music. Thus, A. Mashanov studied the personality of Al-Farabi, including as a musician and music theorist. A. Mashanov connected Al-Farabi and other prominent scholars of the Muslim East with great figures of Kazakh history and culture. So, in one of the recent works "Al-Farabi and Abai" A. Mashanov⁴⁶ showed how deeply Abai's creativity and philosophical views are connected with the philosophy of Al-Farabi. "Al-Farabi is a musician, and call him a philosopher; Abai is a philosopher, and acknowledge him as a poet". A. Mashanov believed that Al-Farabi and Abai were connected by a strong spiritual thread. He believed that Kazakh written poetry begins with Abai, and the origins of the science of Central Asia and the Arab world – with the works of Al-Farabi.

In works devoted to Al-Farabi and problems of modern science A. Mashanov proved that many known concepts and discoveries are based on the teachings of Al-Farabi, and some of them, attributed to European scientists, are in fact the discoveries of Al-Farabi. For example, the concept of a concave mirror (paraboloid) and the ray at its center as a focal point was introduced into science by Al-Farabi, although this discovery is attributed to Johannes Kepler. According to A. Mashanov, not only this but also many other concepts outlined in the book "Music of Heaven" Kepler borrowed from Al-Farabi's "The Big Book about Music".⁴⁷

In the late summary book "Al-Farabi and modern science" A. Mashanov⁴⁸ explores different aspects of the history of science and draws parallels between modern scientific achievements and the scientific views of Al-Farabi. He outlines his own scientific and philosophical views, referring to the peculiar sacredness of geometric figures and symmetry in ancient science. "One of the most striking examples of the application of the mirror pattern in the cultural history of mankind are the methods of determining time, chronology, and calendar compilation.⁴⁹ This culture is related to astronomy, which is the mother of all science. It is as old as humanity itself". In the first half of this work, A. Mashanov briefly mentions the beginning of his scientific activity and his passion for the magic of crystals. The author highlights the uniqueness of the water molecule and talks about the shape of the Earth and how it was sometimes attributed to the shape of a cube in ancient times. A. Mashanov paints us a picture of the development and formation of modern scientific knowledge, deducing Al-Farabi as one of the founders of modern science. He calls him a representative of the rationalist trend in science and art. "We think that in our new era, the era of the magnificent flourishing of science, there will be even more followers and

⁴⁴ Mining Research Group, "Akjan al-Mashani."

⁴⁵ Samal Tuleubayeva, "On the History of Arabic Studies in Kazakhstan," *Arabic Studies of Eurasia* 2018-December (2018): 88-100; Valentyna Molotkina and Oksana Tarapon, "Historical documents as a means of activation of students' cognitive activities in history lessons," *Society. Document. Communication* 16 (2022): 107-129.

⁴⁶ Akzhan Mashanov, "Al-Farabi and Abai," 26-39.

⁴⁷ Shamshi Abdiraman, "Did Abai Know al-Farabi?"; Marzhan Nurpeisova, "Akzhan Mashanov – Scientist Miner."

⁴⁸ Akzhan Mashanov, "Al-Farabi and Modern Science," 44-49.

⁴⁹ Iryna Skakalska, Iryna Borak and Halyna Senkivska, "Information Potential of Museums in The Process of Forming Professional Competence of Students," *Society. Document. Communication* 14 (2022): 285-303; Tynysbek Kongyrtbay, "The ethnic nature of the Kazakh heroic epic alпамыс," *Eposovedenie* 21, no. 1 (2021): 14-29; Muratbek Toktagazin et al., "Modern internet epistolary in information and media discourse," *Mathematics Education* 11, no. 5 (2016): 1305-1319.

admirers of Al-Farabi. And the more followers there are of such noble people, the more the nobility of the people and the country will become". Thus, it can be concluded that the literary heritage of A. Mashanov is very extensive and multifaceted, going beyond the limits of Farabi's studies. The literary legacy of A. Mashanov spans various spheres of scientific activity, from geology to philosophy and the history of science, in each of which A. Mashanov left a significant mark. Because of this, the study of A. Mashanov's literary heritage is of theoretical and practical importance.

Conclusions

The theoretical significance of the study lies in broadening the discussion of the historic heritage of A. Mashanov, expanding knowledge about him, as well as further exploring aspects of his creative work and the multifaceted personality of the great scholar. The practical significance of the work lies in a thorough study of A. Mashanov's scientific findings as an encyclopaedic scholar, which could have an impact on subsequent research in various areas.

A. Mashanov's pop science books aimed to make scientific knowledge accessible to a broader audience. These works covered topics ranging from the mysteries of the Earth to space exploration, reflecting his commitment to popularizing science. Furthermore, A. Mashanov's writings on the foundations of Islam and his exploration of religion in the context of Soviet-era restrictions offer valuable insights into his complex relationship with faith.

The historic heritage of A. Mashanov can be divided into several trends and separate units: scientific studies on geology, in particular, those that became the basis for the development of geomechanics in Kazakhstan; textbooks on geology, as well as translations of textbooks of Russian speaking authors into Kazakh; Farabi studies, which introduced Al-Farabi's name to Kazakhstan and firmly connected the name of this scientist with Kazakh history and culture; popular science works devoted to the personality of Al-Farabi, the general history, popularization of scientific knowledge among a wide range of readers; publications on the basics of Islam; fiction, that in turn can be divided into works of science and historical fiction. Another noteworthy aspect of A. Mashanov's legacy is his pioneering research on Al-Farabi, the Islamic philosopher, and scholar. A. Mashanov's dedication to introducing Al-Farabi's importance to Kazakhstan and the world, despite ideological challenges, is commendable. His series of works and the initiation of an international conference on Al-Farabi's 1100th anniversary marked the beginning of Farabi's studies in Kazakhstan.

Thus, A. Mashanov has made a significant contribution to a variety of sciences and his historic heritage includes both purely scientific works and works of popular science and fiction. He introduced the Kazakh people to the name of the "great ancestor" Al-Farabi, showing his indissoluble connection with his native land. Some of A. Mashanov's later works remain insufficiently recognised and studied. Therefore, the historic heritage of A. Mashanov will continue to be systematically studied in the future.

References

- Abdiraman, Shamshi, "Did Abai Know al-Farabi?" accessed March 13, 2025, <https://cutt.ly/6Jvn7Rq>.
- Atias, Osnat et al., "Meaningful Participation of Schools in Scientific Research through Contributory Citizen Science Projects," *Science Education* 107 (2023): 1163-1192.
- Ayagan, Burkitbay. "Kazakhstan," in *National Encyclopedia*. Kazakh Encyclopedia, 2005.
- Bazaluk, Oleg and Nezhyva, Olga, "Martin Heidegger and fundamental ontology," *Analele Universitatii din Craiova, Seria Filozofie* 38, no. 2 (2016): 71-83.
- Boiko, Vita, and Kuleshov, Serhii, "Movable monuments of history and culture in the state register of national cultural heritage: a comparative analysis," *Society. Document. Communication* 19 (2023): 60-80.
- Bokaev, Kuanbek, "Al-Farabi and Akzhan Mashani," *Nation*, 12, no. 1 (2012): 8-15.

- A Comprehensive Study of Akzhan Mashanov's Islamic Heritage and Its Impact on Historical Scholarship*
- Burchardt, Marian and Becker, Johannes, "Subjects of God? Rethinking Religious Agency, Biography, and Masculinity from the Global South," *Historical Social Research* 48, no. 4 (2023): 131-155.
- Doszhan, Raikhan, "The Question of Being in Al-Farabi's Egacy and its Succession to Modern Science," *Interdisciplinary Cultural and Humanities Review* 1, no. 1 (2022): 40-44.
- Erokhina, Marina, "Historical Personality: Modern Methods of Study," *Teaching History at School* 7 (1996): 50-52.
- Imazhinova, Zhadira, "Who Was Akzhan Mashani, What Kind of Life Did She Leave?" *Ak Zhelken* 12 (2014): 10-12.
- International News Agency, "KazInformation," "Akzhan Mashani found Al-Farabi's grave," accessed March 13, 2025, https://www.inform.kz/kz/al-farabidin-ziratyn-tapkan-akzhan-mashani_a2477128.
- Jørgensen, Marianne W. and Phillips, Louise J. *Discourse Analysis. Theory and Method*. Humanitarian Center, 2008.
- Konayeva, Gaukhar et al., "Al-Farabi's Teaching About the Head of a Virtuous City in the Context of Modern Kazakhstan," *Acta Baltica Historiae et Philosophiae Scientiarum* 8, no. 1 (2020): 96-106.
- Kongyratbay, Tynysbek et al., "Study of the heritage of Korkyt in the Turkic world," *Asian Social Science* 11, no. 21 (2015): 55-61.
- Kongyratbay, Tynysbek, "Once again about the epic heritage of Korkut," *Eposovedenie* 2022, no. 2 (2022): 28-39.
- Kongyratbay, Tynysbek, "The ethnic nature of the Kazakh heroic epic alpamys," *Eposovedenie* 21, no. 1 (2021): 14-29.
- Mashanov, Akzhan, "On the Study of the Heritage of Al-Farabi," *Bulletin of the Academy of Sciences of the KazSSR*, 5 (1961): 67-89.
- Mashanov, Akzhan, "Study of the Works of Farabi in Kazakhstan," in *Return of the teacher. About the life and work of Farabi* (Alatau, 1975), 89-94.
- Mashanov, Akzhan. *Al-Farabi and Abai*. Alatau, 1994.
- Mashanov, Akzhan. *Al-Farabi and Modern Science*. Al-Mashani International Public Foundation, 2007.
- Mining Research Group, "Akjan al-Mashani," accessed March 13, 2025, <https://cutt.ly/BJvzPjE>.
- Molotkina, Valentyna and Tarapon, Oksana, "Historical documents as a means of activation of students' cognitive activities in history lessons," *Society. Document. Communication* 16 (2022): 107-129.
- Mutanov, Galimkair. *Mashanov Akzhan*. Kazakh University, 2017.
- Nukezhanova, Samal, Dyussebekova, Maira and Zelenin, Vsevolod, "Mythodesign in modern Kazakh realities: State and development prospects," *Comparative Sociology* 23, no. 2 (2024): 216-239.
- Nurpeisova, Marzhan, "Akzhan Mashanov – Scientist Miner and Researcher of the Heritage of al-Farabi," accessed March 13, 2025, <https://cutt.ly/1JvjaKr>.
- Nurpeisova, Marzhan, "Al-Mashani Asain Matani," *Dertka Daua* 2017-April (2017): 7-12.
- Ponomareva, Margarita, "The originality of historical discourse in N. A. Polevoy's Novel "The Oath at the Holy Sepulcher," *Yaroslavl Pedagogical Bulletin* 4, no. 1 (2010): 243-247.

Samataev, Rustem and Tleubergenov, Kazbek, “*The Man Who Returned the Mugalim Sled to the World,*” accessed March 13, 2025, <https://www.ihsan.kz/ru/articles/view/8659>.

Shapiyan, Marfuga, “How Akzhan Mashani Returned al-Farabi to the Kazakhs,” accessed March 13, 2025, <https://cutt.ly/xJvnQAY>.

Shashkina, Gulzhan et al., “Flower representations in the lyrics of A.A. Fet,” *Open Cultural Studies* 9, no. 1 (2025): 20250047.

Skakalska, Iryna, Borak, Iryna and Senkivska, Halyna, “Information Potential of Museums in The Process of Forming Professional Competence of Students,” *Society. Document. Communication* 14 (2022): 285-303.

Talmont-Kaminski, Konrad and Shults, LeRon F., “Modern Religion as Vestigial Structure: An Evolutionary Account of Secularization,” *Religion* 54, no. 2 (2024): 330-332.

Toktagazin, Muratbek et al., “Modern internet epistolary in information and media discourse,” *Mathematics Education* 11, no. 5 (2016): 1305-1319.

Tuleubayeva, Samal, “On the History of Arabic Studies in Kazakhstan,” *Arabic Studies of Eurasia* 2018-December (2018): 88-100.