

Progressive Engineering Ideas of The Jadids Of Turkestan

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Abstract: The principal activities of the Turkestan Jadids are most evidently expressed through their publications in the press. In addition to addressing social and economic matters, they also discussed engineering and technological developments in detail. International events consistently captured their attention as well. The Jadids advocated for renewal and modernization across all sectors of society and actively sought to implement these ideas in practice.

Keywords: Jadidism, press, Sadoyi Ferghana, Yangi, Yangi usul, engineering and technology, lithographic machine, Matbaai Is'hoqiya, printing press, Tarixi traktur.

Introduction: Following the Timurid era, scientific and cultural development in Central Asia began to decline significantly. The field of engineering, in particular, lagged far behind global progress. This stagnation stemmed primarily from the inadequacies of the prevailing socio-economic systems in the khanates of that time. The autocratic monarchies, entrenched ignorance, denial of secular knowledge, and the self-serving priorities of the ruling elites had effectively blocked the nation's path to progress. Tragically, these feudal policies, perpetuated over centuries, left a profound imprint on public consciousness. People became entangled in trivial domestic issues, losing sight of greater aspirations.

METHODOLOGY

By the end of the 19th century, Tsarist Russia had colonized much of Central Asia. The local population mounted several national liberation movements in pursuit of independence. However, the region's lack of industrial and technological advancement, as well as the underdevelopment of national engineering and scientific disciplines, resulted in these efforts being suppressed by the Tsarist regime. At the turn of the 20th century, a new socio-political and cultural movement — Jadidism — emerged in Turkestan. The Jadids aimed to liberate the region through the

advancement of science, industry, and technology. As one of the prominent Jadid thinkers, Munavvar Qori Abdurashidkhanov, lamented: "While the European nations soar through the skies, we debate about hair and beards; while they explore the depths of the sea, we argue over the length of garments; while their cities are lit and heated with electricity, we continue debating whether geography and natural sciences should be taught in schools."

DISCUSSION

Jadidism and Engineering Ideals Originating in the Russian Empire during the second half of the 19th century, the Jadid movement reached Central Asia by its end and spread widely in the early 20th century. According to Jadid thought, liberating nations from socio-economic backwardness required a radical reform of the educational system, incorporating modern and innovative teaching methods. The term jadid itself derives from Arabic, meaning "new" or "new method." The Jadids believed that the future of the nation rested on the advancement of secular sciences, particularly engineering. They argued that the country's technological and industrial backwardness was a key obstacle to development. Agriculture, the backbone of the region's economy, was especially underdeveloped and lacked mechanization.

In the late 19th and early 20th centuries, agriculture dominated both the economy and the daily lives of the population, as industrial production remained minimal. However, technological innovation was absent in this vital sector. Without modernization, true progress was impossible. The Jadid intellectual Abdulla Avloniy expressed this despair in his writing: "You sleep in the arms of ignorance—awake, oh nation, cast off the cloak of darkness. Rise, for the time and the people demand it!"

Similarly, Cho'lpon wrote in one of his articles: "In my previous article, I noted that none of our farmer brothers use agricultural machines... Yet these machines are indeed useful." He added: "Americans plant one wheat seed and harvest twenty sacks; Europeans buy our cotton for five kopecks and sell it back to us for twenty-five." From these observations, it is evident that the Jadids understood the importance of engineering and technological achievements in national development.

The Role of Engineering and Technology in Society Engineering and technology form the foundation of human civilization and are the defining features of modern culture. No society can achieve sustainable progress without scientific and technological advancement. Scientific-technical development not only shapes modern society but also determines the economic progress of nations and individual enterprises alike. Hence, the history of science and technology is an integral part of world history. The development level of engineering knowledge in any period offers insights into human progress. Thus, evaluating a historical phase of a society requires an understanding of its scientific and technological condition. At the turn of the 20th century, the situation in Central Asia in this regard was far from ideal.

Social needs arise from economic relations, which in turn shape the conditions for technological progress. The development of engineering is driven by the interaction between humans and nature. Technology enables the replacement of human physical effort with mechanical power, overcoming the limits of human psychophysical capacity. History shows that societal advancement has always depended on the development of productive forces—an area closely tied to engineering. The social function of technology lies in its ability to enhance labor productivity and expand human technical culture. New technologies cannot be created without a sufficient level of engineering knowledge aligned with natural laws and practical human activity.

Is'hoqxon To'ra Ibrat: A Pioneer of Technical Innovation. The Jadids, having understood these social-

philosophical truths, did not neglect the importance of engineering knowledge and technological development. Among them, Is'hoqxon To'ra Ibrat was particularly notable for his contributions to technical progress. In 1908, Ibrat undertook a significant initiative by purchasing a lithographic printing machine from a printer named Gaufman in Orenburg, with payment deferred over ten years. He transported the equipment by train to Kokand and by camel to To'raqo'rg'on, enduring great hardship. In April 1908, he established a printing house named Matbaai Is'hoqiya on the site of a former bathhouse he had constructed in 1905.

This was a remarkable achievement for its time. Before then, copying books was a labor-intensive and time-consuming task performed manually by calligraphers over months or even years. The limited number of books made them inaccessible to the broader public. The opening of the printing house greatly expanded access to knowledge and literature.

In his works, Ibrat frequently emphasized the usefulness, convenience, and efficiency of technology for society. For example, in his poem "Tarixi Traktur", he wrote:

A marvel of an era, the tractor has arrived,

It has made our tasks easier, now the tractor thrives...

...Where once three men struggled with an old plow,

Now a tractor tills ten fields in a single day.

Between 1909 and 1913, the Tarbiyai Atfol society in Bukhara sent talented youth abroad, especially to Istanbul and through it to Germany, with the aim of bringing back technical knowledge and initiating new industries in Turkestan. In one of his articles, Abdurauf Fitrat called on his compatriots to awaken from their slumber, to keep pace with European innovations, and to open the path to enlightenment by expanding the new Jadid

CONCLUSION

In summary, the Jadids envisioned a sovereign Turkestan empowered through science, education, and technology. Newspapers published by the movement often compared the state of affairs in Europe with those in Turkestan in terms of economy, agriculture, industry, and technology. Special attention was given to teaching natural and exact sciences in Jadid schools. The Jadids also prioritized sending talented youth to Germany and Turkey to acquire modern education and develop a pool of qualified specialists. The purchase of a lithographic machine by Is'hoqxon Ibrat was, in essence, a revolutionary step in the field of book printing in Turkestan. They firmly believed that such efforts would serve the nation's development and that true independence could not be achieved without

progress in these fields.

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