

Translation and the Promotion of Science at Dar al-Fonun School in Iran Under the Qajars

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Abstract

The present study examines the role of translation in promoting new sciences in Dar al-Fonun, the first modern school of higher education in Iran during the Nasser period (1831-1896). Amir Kabir, the chief minister under Nasser al-Din Shah – following his modernization programs for the development of Iran subsequent to the Western industrial revolution after which Iran experienced a delay in benefiting from advancement in science and technology during the early 19th century – established Dar al-Fonun school in a Western and European style with the aim of promoting and strengthening science and knowledge so that Iranian specialists could be trained in various scientific fields. As a result, translation became one of the tools for introducing modern sciences to Iran in order to fight against the country's backwardness in various fields. The period covered by this research is from 1851 to 1896 – from the foundation of the school to the end of the Nasser era. The results of the study, conducted by using library method, second-hand sources and their content analysis, show that translation in various ways enabled Iranian students to benefit from modern higher education and after graduation, they served as experts in various fields, making a huge contribution to the expansion of modern sciences for the development of the country.

Keywords: Dar al-Fonun School, promotion of sciences, Qajar, Nasser era

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1. Introduction

Translation has functioned as a vital tool in establishing scientific, educational and socio-political infrastructures across various historical eras, a role which can also be seen in Iran under the Qajars during the 19th century. This period can be regarded as an important era in the history of Iran, because the country witnessed dramatic changes that were unprecedented in its history. Due to some events, Iran became increasingly aware of the developments in certain Western countries as well as its own backwardness. This awareness initiated fundamental changes in Iran and propelled the country toward modernization. In the processes of modernizing Iran, some attempts were made by both governmental and non-governmental institutions. The present research explores one of those efforts made by the Qajar government to modernize the country through education by the establishment of a modern school in which translation played a prominent role.

2. Education in Iran Under the Qajars

The founder of the Qajar dynasty was Agha Muhammad Khan Qajar, who ruled over Iran from 1789-1797. After Agha Muhammad Khan, six Qajar kings succeeded to the throne: Fath-Ali Shah (r. 1797-1834), Muhammad Shah (r. 1834-1848), Nasser al-Din Shah (r. 1848-1896), Mozaffar al-Din Shah (r. 1896-1907), Mohammad Ali Shah (r. 1907-1909) and Ahmad Shah (r. 1909-1925). Altogether, the Qajar dynasty ruled over Iran about 136 years. The present research primarily covers 1851 to 1896 time period – from the foundation of Dar al-Fonun school to the end of the Nasser era.

In the early 19th century, the country was in a bad situation in terms of literacy. “Illiteracy [rate] was very high; more than 90% of the population was illiterate” (Fard Saidi, 1974, p. 14). The rate of literacy was less than 5% among urban settlers. More importantly, this rate was limited to three groups: the courtiers, the clerics and the merchants (Zibakalam, 1394/2015). Educational facilities were very poor. The educational system of the period was traditional, based on which elementary education was provided in the maktab (literally, the place of writing) run by clerics called molla.

In maktab, under the tutelage of clerics, the students first learned the alphabet and then the recitation of the Holy Qur’an, ethics and Sharia law; however, mathematics and other kinds of empirical sciences were not taught there (Madani, 2015). The knowledge of the literate was limited to reading and writing; hence, there was no ground for the intellectual growth of the majority of people. By the first half of the 19th century – before the foundation of Dar al-Fonun – politics, economics, chemistry, biology, physics, medicine, etc. were not known in Iran. The number of periodicals and books on modern sciences was scarce and no communication tools existed in the country (Zibakalam, 1394/2015). Iranians’ knowledge about the world was little and they were not aware of the Renaissance, the discovering of the new lands (such as the Americas), the scientific revolution, the Industrial Revolution, and the Great French Revolution (Zibakalam, 1394/2015).

Although in the previous centuries during which the East was the transmitter of science to the Western world, in this period due to the Western Industrial Revolution a shift was seen – the East needed to access the Western scientific knowledge and Iran was not an exception (Farahzad & Adili, 2019). According to Alam and Biseda (1393/2014, p. 254):

Nineteenth-century Iran was a country that, after years of chaos resulting from the collapse of the Safavid dynasty and the rise of different individuals to power in short intervals, witnessed the formation of a new government called the Qajar dynasty. This rise to power coincided with an encounter with a new and civilized world that was full of industrial, scientific, and military discoveries and that greatly influenced Iran, which due to its strategic position, was in relation to the major powers of the time.

After the Industrial Revolution in the West (1790-1840) resulted in the development, modernization and industrialization of the Western countries, Iran – disconnected and isolated from the rest of the world in the early 19th century – suffered from retardedness scientifically, socially, politically, culturally and economically; one of the results of which was Iran's loss in Russo-Persian wars (1804-1813) whose main reason was Russian advanced weapons and modern artillery.

The awareness developed among some of senior figures of the Qajar government concerning the characteristics of the new advanced world, especially the West, with its scientific, technical, and military advances, provided a favorable basis for beginning efforts to compensate for the backwardness. (Alam & Biseda, 1393/2014, p. 254)

Hence, after Iran's defeat in the Russo-Persian wars, the early serious attempts were made to fight the presumed social, political, cultural, economic and scientific backwardness including commissioning the translation of a variety of books from different languages into Persian and dispatching students to European countries to educate specialists in various fields. At the beginning, several books on military materials concerning military equipment, war techniques, military regulations, etc. were commissioned, then other topics such as science, health, and history were added to the modernization agenda (Farahzad & Adili, 2019). Thus, translation became one of the early measures taken by the Qajar government to confront backwardness. However, according to Haddadian Moghaddam (2014, p. 53):

The institutionalization of translation did not take place until the establishment of [the] Dar al-Fonun [lit. the house of techniques] in 1851, the first modern school of higher education in Iran, thanks to the efforts of the reformist Amir Kabir (1807–1852), chief minister to Nasir al-Din Shah [the third king of the dynasty].

3. Establishment of Dar al-Fonun

The idea of establishing a secular school in European style to teach modern sciences in order to meet the basic needs of the Iranian society was first proposed by Amir Kabir in order to train “Iranian youth in modern military, scientific and bureaucratic disciplines” (Ekhtiar, 2001, cited in Atefmehr & Farahzad, 2021, p. 84). Amir Kabir, who had become familiar with the educational systems of Russia and the Ottoman Empire during his political missions to those countries, placed the expansion of new sciences and technologies as part of his reformist and modernization agenda. Furthermore, not satisfied with the previous efforts in dispatching the students to the European countries for not acquiring sufficient skills in the related fields and techniques, the high cost of living in Europe, the small number of the students and the need of the government for more specialized personnel, he decided to establish Dar al-Fonun (Mahboubi Ardakani, 1354/1975, cited in Alam & Biseda, 1393/2014) whose main reasons according to Pazouki (1395/ 2016, p. 13) were:

1. Training and educating knowledgeable and specialized individuals for the country
2. Organizing the army through training skilled personnel
3. Preventing the influence of British and Russian agents in Iran by cultivating the talents of Iranian youth, especially in the field of national politics
4. Changing the methods and procedures of traditional education and raising people familiar with modern sciences
5. Production of imported industrial products within the country, such as medicines, spermaceti candles, paper, crystal dishes, fabrics, etc.
6. Providing the necessary conditions for training informed and independent managers in the future

E'temad al-Saltaneh, the statesman, translator and author active during the reign of Nasser al-Din Shah, explains that:

Nasser al-Din Shah had always been concerned about educating Iranians all over the country; thus, to spread modern sciences, such as mathematics, natural sciences and chemistry as well as other discoveries of European scientists, the school of Dar al-Funun was built. (E'temad al-Saltaneh, 1295AH /1878, cited in Atefmehr & Farahzad, 2021, pp. 84-85)

In addition, in the Nasser era, the necessity for the establishment of secular schools was emphasized by the intellectuals of the period; moreover, many articles were being published in the newspapers in favor of establishing modern secular education. Those intellectuals saw Europe as the cradle of modern science and technology and believed that the reasons for the development of Western countries were their schools and their efficient educational systems; therefore, they considered the study of Western sciences as an essential pre-requisite to eliminate the widespread illiteracy, ignorance, backwardness and superstitions prevalent in the Iranian society. They saw the path of development in modern education through which the entire population could enjoy education to acquire modern knowledge.

Accordingly, after receiving positive feedback from Nasser al-Din Shah, Amir Kabir issued a decree to hire expert teachers most of whom were from central Europe where French was the language of diplomacy (Ruhbakhshan, 1987, cited in Bahri, 2011). So, French became the official language of Dar al-Fonun (Kamali, 1392/2013). Those teachers were hired to teach a variety of subjects such as medicine and surgery, engineering, mineralogy, agriculture, pharmacology, chemistry, physics, mathematics, military sciences, foreign languages, history, and geography (Hashemian, 1379/2011). However, at the beginning, language turned out to be a big problem as both the teachers and students could not communicate since neither the students were familiar with French nor the teachers knew Persian. To overcome the problem some solutions were sought through which translation played a great role. Karimi-Hakkak (1998) acknowledges this significant role of translation and states, "translation as well as interpretation began to play a crucial role in the evolution of pedagogical processes in modern Iran" (p. 518).

4. Solutions Sought to Overcome Language Problems

The content analysis of the second hand sources gave rise to the identification of five solutions to overcome language problems which are discussed below.

4.1. The First Solution

At the outset, it was decided the class lectures were being simultaneously interpreted into Persian; a few of these interpreters were the dispatched students to France during the reign of Muhammad Shah – the second king of the dynasty – who were now back home (Azarang, 1394/2015). Of those students Mirza Zaki can be named who was dispatched to France to major engineering but he had to come back to Iran due to the French Revolution of February 1848 and also the death of Muhammad Shah in September of the same year; after the establishment of Dar al-Fonun, he was hired as the interpreter of August Karl Krziz, the artillery teacher (Atefmehr & Farahzad, 2021).

Another class interpreter who could be named was Mirza Malkom Khan sent to France by his family to continue his education, then returned to Iran after eight years. In Dar al-Fonun, "he was the interpreter of Zatti, the Italian teacher, who taught mathematics" (Azarang, 1394/2015, p. 279). Some of the class interpreters later reached the level of teacher and sometimes taught courses as well; Mirza Malkom Khan was one of them and taught arithmetic, general geometry, logarithms, and geography (see

Kianfar, 1384/2005). However, the number of those interpreters was limited and other solutions had also to be sought.

4.2. The Second Solution

The second solution was related to translation again. The foreign instructors used to write their course materials in foreign language, and the interpreters who assisted them in the classroom or other translators rendered the materials into Persian (see Azarang, 1394/2015). The need for the publication of textbooks in the Dârol-Fonun led to the foundation of a small printing-house in the school in 1851, which can be considered as the first specialized printing-house in the history of Iran. In this printing house, which was active until 1882, 30 to 40 textbooks were published (see Mirzay Golpaygani, 1378/1999).

Kianfar holds that (1384/2005), those books were mostly devoted to military, basic sciences, and medical sources. Of those foreign instructors who wrote books, August Karl Krziz could be referred to who wrote some books related to basic sciences and military. Mirza Zaki, his class interpreter, translated them into Persian. As stated by Atefmehr and Farahzad (2021):

Mirza Zaki compiled and translated some booklets from what Krziz taught in classes or from the pamphlets he prepared for the students. One of the early booklets, perhaps the first one that was prepared by Krziz and Mirza Zaki for the students of Dar al-Fonun, is titled *Qava'ed-e Mashq-e Dasteh va Qa'ed-ye Nazm-e Tupkhaneh-ye Mobarakeh* (1296/1852) [...]. Other booklets are *Mizan al-Hesab* (1274/1857), *Elm-e Jerasqil* (1274/1858), *Resaleh dar Elm-e Mashq* (1270/1854), *Elm-e Masahat* (n.d) and *Elm-e Tupkhaneh* (n.d). (p. 89)

Another instructor who authored some books in basic sciences and military was a French teacher called Monsieur Bohler who taught calculus, geometry, algebra, trigonometry, cartography, engineering and military sciences in Dara al-Fonun; his books were translated into Persian by Abdol Rasul Khan Isfahani, Mirza Shafi Tabrizi, and J'afar Qoli Khan Hedayat, the then president of Dar al-Fonun (see Kianfar, 1384/2005; Heydari & Haqir, 1401/2022). One of his famous books, *Resale-ye Elm-e Tahasson* [A treatise on building castles], according to Heydari and Haqir (1401/2022, p. 5) "was translated into Persian in 1858-9 for the purpose of teaching engineering skills and fortifications. It contains some information about building castles, bridges, moats and urban fortifications on the basis of contemporary methods and techniques in 17th century".

The first translated medical books were the works of Dr. Edward Jacob Polak, a famous Austrian physician at Dar al-Fonun whose works were mainly translated by his class interpreter Muhammad Hossein Khan Qajar (see Kianfar, 1384/2005). Another physician at Dar al-Fonun was Dr. Johan Louis Schlimmer, the Dutch physician and medical professor, whose works were translated into Persian by Iranian translators. He also co-authored a French-Persian medical dictionary with Mirza Ali Akbar Khan Nafisi entitled *Terminologie Medico-Pharmaceutique et Anthropologique Francais-Persane* in 1875; many contemporary Persian medical terms owe their origin to the efforts of Dr. Schlemmer (Afkhami, 2013).

It must be noted that translation in Dar al-Fonun had a great "influence on the spread of simplified Persian prose writing, because at that time, practical and rapid translation was necessary according to the needs of the country". (Kianfar, 1373/ 1994, p. 258). In the prose of the period as Rypka (1968) mentions:

one finds a flowery, dallying, bombastic, often superfluously garrulous style, trifling and often even empty in substance. This causes an increase in the use of Arabic words in Persian to the utmost possible limits. So that only professional beaux-esprits were capable of understanding such literature. No regard is paid to the necessities of everyday life. (pp. 312-313)

Therefore, the translators of the era paid special attention to the necessities of everyday life. They used simple structures and words in their translations and paved the way for simple style of writing. According to Aryanpur (as cited in Mohseni & Khachatourian Saradehi, 1390/2011, p. 795), their use of everyday words “not only affected the Persian prose but also influenced the literary taste and the reading habits of Iranians”, which led to the emergence of modern literature in the country.

4.3. The Third Solution

The third solution concerned the instructors themselves. Some of Dar al-Fonun instructors later learned Persian and as a result they were able to translate and teach in Persian. Of those instructors, Dr. Polak can be mentioned here particularly who decided to learn Persian. Apparently, according to Atefmehr and Farahzad (2021), the reason was that his class interpreter Muhammad Hossein Khan Qajar was not proficient in French. In his itinerary, Polak (1361/1982, cited in Atefmehr & Farahzad, 2021, p. 93), depicts that:

at the beginning he thought the translator works well; however, after a while he realized that the translator did not understand him at all and instead of translating his words repeats the wrong content of Persian books for students (pp. 209-210). Therefore, Polak decided to learn Persian and in the meantime he used drawings and gestures to teach medicine to his students.

The content of the translated works in Dar al-Fonun school was in some way in conflict with the traditional thoughts and the prevailing atmosphere in Iran. Consequently, those books promoted modern thoughts in the fields of medicine, military affairs, and so on. Dar al-Fonun made a significant contribution to the introduction of new sciences and the doubting of the foundations of traditional sciences.

Dar al-Fonun was also engaged in literary and drama translation, which in turn influenced Persian drama writing as well as the Iranian dramatic performances of that era. In 1885, a small theatre was established in Dar al-Fonun and in order to perform Western dramas, some dramatic works were translated into Persian including *Misanthrope* by Moliere. Probably, some teachers of Dar al-Fonun had direct involvement in the translation of those works, or cooperated in their translations (Azarang, 1395/2015).

4.4. The Fourth Solution

The fourth solution was offering foreign language instructions. As stated earlier, French was the official language of Dar al-Fonun. Therefore, teaching and learning the French language was compulsory. The foreign language curriculum of the school consisted of “reading European texts, grammar exercises, vocabulary, writing composition, dictation and translation” (Ekhtiar, 1994, p. 249). As can be noted, translation again played an important role and was formally included in the foreign language program. However; for teaching French, some textbooks were needed. The first French teacher in Dar al-Fonun was Jules Richard or Rishar Khan who was originally from France. His authored books according to Kianfar (1384/2005) were in fact both authored and translated. His first book entitled *Dialogue*

began with the French alphabet, then came the numbers. In each section, the words were in two columns: the left column in French and the right column in Persian. Grammatical materials were summarized in each section. The book was organized into 6 chapters and included special sentences at the end. Some pages had short footnotes. (p. 92)

His second book, entitled *A New Practical and Easy Way to Learn French*, printed in the printing house of Dar al-Fonun, also consisted of 6 chapters (Kianfar, 1384/2005).

Mirza Ali Akbar Khan Naghash Bashi, known by the title of Mazin al-Dawleh, translated and authored a book for students of Dar al-Fonun entitled *Correct Pronunciation of the French Language* which contains fifty instructions some of which include brief grammatical points; the book – organized as a glossary – had three columns on each page: the first column contained the French words, the second column contained the Persians words, and the third column contained the Persian to French phonetic transcription (Kianfar, 1384/2005).

It must be noted that in addition to French, later other languages such as English, Arabic, and Russian were also taught in foreign language courses (see Khosrobeigi & Khaled Feyzi, 1391/2012) and the students were free to choose one or all of them; however, learning French was compulsory and this language received more significance and attention as it was mainly used in scientific courses (see Pazouki, 1395/2016).

4.5. The Fifth Solution

Finally, the graduates of Dar al-Fonun, who had already become familiar with foreign languages especially French, translated different technical books and papers into Persian. They had a significant impact on the spread of modern sciences. So Dar al-Fonun school “was influential in training many translators, authors and researchers who transmitted their knowledge in translation, one way or another” (Farahzad & Adili, 2019, p. 13). As Azarang (1394/2015) puts it:

Dar al-Fonun was the first Iranian educational institution in the new era wherein translation was one of its main tasks. [...] Some of the graduated students of Dar al-Fonun joined the translators of the Ministry of Foreign Affairs or worked in foreign embassies; some others cooperated with governmental institutions and newspapers, or went to other countries to continue their education and returned to Iran as experts. They formed a generation who were influential in training translators and authors during and after the Iranian Constitutional Movement. (pp. 253-254)

Of those graduated students, Mirza Kazem Mahallati can be named who “was a pharmacist, chemist, translator, natural sciences teacher, mineralogist, poet, and journalist of the Nasseri era, and one of the most prolific Iranian teachers at Dar al-Fonun” (Saqafi, 1391/2012, p. 86).

In addition to French, Mirza Kazem Mahallati studied pharmacy and natural sciences at Dar al-Fonun with the Italian teacher called Monsieur Focckette. After his graduation, he was dispatched to France by the Qajar government to continue his education, then he returned to Iran and was employed in Dar al-Fonun as a teacher and taught pharmacy and natural sciences instead of his teacher Monsieur Focckette following his departure from Iran (Saqafi, 1391/2012). He taught at Dar al-Fonun alongside foreign teachers for many years; his influence on the spread of pharmacy was greater than European teachers at Dar al-Fonun because he taught in Persian, while those teachers taught in French (Saqafi, 1391/2012).

Mirza Kazem Mahallati wrote a book entitled *Tazkare-ye Adviye-ye Nasseri* [Nasseri Drug Tezkire] and taught to his pupils how to translate it; in addition, of his valuable works, the compilation of chemistry textbooks and articles can be mentioned, in authoring which he used French sources as he had access to new French scientific books and journals and compiled his works based as much as possible on contemporary European scientific knowledge (see Saqafi, 1391/2012). His “up-to-date knowledge was highly beneficial as a pharmacy instructor at Dar al-Fonun, and he played an active role in transferring scientific knowledge to the students in this discipline” (Saqafi, 1391/2012, p. 98).

5. The Decline of Dar al-Fonun

In addition to pedagogical influences, Dar al-Fonun was also influential in the enlightenment of Iranians. Initially, the pupils of this school were the children of the elite; however, gradually students belonging to other classes of the society were admitted, who enjoyed the benefits of modern education (Qasemi Puya, 1377/1998, pp. 136-137).

At the outset, according to Pazouki (1395/2016), the number of Dar al-Fonun students who studied in different fields were 114 distributed as follows: engineering (12 students), artillery (26 students), infantry (39 students), cavalry (5 students), medicine and surgery (20 students), physics, chemistry and pharmacy (7 students) and mineralogy (5 students); gradually, the number of the students increased and, according to the yearbook of 1300 AH /1882, the number of the students reached 262 (pp. 22-25).

The Shah and “all the courtiers were proud of this school in so far as education was to matter. In order to acquire a good reputation at home and abroad, the Shah visited the school regularly and praised the students and teachers” (Qasemi Puya, 1377/1998, p. 137). However, as stated by Pazouki (1395/2016, p. 23),

beyond the Shah’s attention and care, there was another hand at work. The same power which eliminated Amir Kabir before the opening of Dar al-Fonun knew that if a modern school was established in a country, intelligent students would be emerged, and consequently that country could not be turned into a colony or semi-colony. Therefore, two ways were chosen to neutralize the school: First, the recruitment of Italian rebel officers alongside Austrian teachers, prevented the Austrians from doing their duties properly from the very beginning, and as a result nullified all the caution Amir Kabir had exercised about the nationality and political orientations of Dar al-Fonun instructors. Second, integrating politics into education; in other words, discouraging the Shah from supporting the school. This action was followed by political orientation aimed at the school’s students.

Hence, when Nasser al-Din Shah and his courtiers noticed that the students of Dar al-Fonun whispered voices of liberalism and the rule of law, and passed Shabnamehs and other papers of protest to enlighten the public, Dar al-Fonun lost its royal support and patronage (Qasemi Puya, 1377/1998). In the late Nasser period, especially in the years after the victory of the tobacco movement, Nasser al-Din Shah “ended the growth of Dar al-Fonun [and] forbade the opening of new schools” (Abrahamian, 1979, p. 400). Therefore, Dar al-Fonun fell into decline. According to Pazouki (1395/2016, p. 23),

The Shah would hear the name of the school with disgust and was just satisfied with preserving the school’s appearance [...]. As a result, Dar al-Fonun became a place where a number of princes and sons of nobles and officials were gathered and taught so that in the future they would be just literate servants (employees), rather than people who would meet the scientific and technical needs of the country and advance Iran alongside other countries. In short, instead of educating scholars, the school was converted into a factory for the production of educated servants because it was diverted from its founder’s original purpose. However, people were very fond of the school.

Thus, Dar al-Fonun school lost its primary function, fell into decline and later it turned into a common school. This period ended in 1896 when Nasser al-Din Shah was assassinated by Mirza Reza Kermani, the Iranian pan-Islamic revolutionary.

6. Conclusions

Dar al-Fonun was the first modern educational institution in Iran to train specialized individuals. It had a great role in promotion of modern sciences in the country through training talented Iranian students. After they were graduated, they started to serve their country in various ways. A part of this promotion was related to translation and interpretation, which had several fundamental effects on the Dar al-Fonun, it included the translation of plenty of books in different scientific fields, expansion of simultaneous interpretation, teaching foreign languages, compilation and translation of numerous textbooks as well as authoring a plenty of books in Persian. Moreover, translation in Dar al-Fonun contributed to simplified Persian prose writing the effect of which remains to this day.

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