

Notes on Iran's higher education, pre-1979

Sobouti, Y.

Institute for Advanced Studies in Basic Sciences – Zanjan

And

Iran Academy of Sciences

Two days ago, I got hold of the September issue of Science. There I found a one-page article by our Minister of Science, Research, and Technology, Dr. Mohammad Farhadi, and I would like to share parts of his writings with you.

"...Iran is now a nation of 78 million people, with about 4.5 million university students, 2,500 higher education institutions, 36 science and technology parks, 400 nongovernmental scientific associations, more than 800 research centers, and 1,000 scientific journals. our scientists publish about 30,000 international scientific papers annually, a growth of at least 20-fold since 1979. These achievements could not have been reached without the intensive participation of individual scientists and scientific societies and government support. This participation sprang from a model of development for post-revolutionary Iran that respects the rights of all Iranians to have access to higher education. It is this philosophy that has helped the country weather internal and external disturbances. Sanctions on Iran, for example, pushed its science, industry, and service sectors to cooperate in new and fruitful ways and also forced scientists to work more creatively and promote a knowledge-based economy for the first time in Iran's history. This environment further spurred science-driven political discourse in the country. A prominent example is the role of the scientific community in the recent negotiations on Iran's nuclear program. This could not have materialized without the participation of scientists to provide technical expertise and to clarify scientific language....

.....

Today, Iran is in a position to fine-tune its development model and move toward qualitative improvement of its science and technology. This includes growing its international scientific collaborations. Given that cooperation is most effective through direct contacts between scientists rather than through government-driven agreements, the Iranian government will encourage and support collaborations initiated by individual scientists from within the country or any part of the world... In addition to the increasing number of scientific personnel and the growing scientific infrastructure, Iran offers a unique environment for certain research areas such as archaeology, desert studies, ecological studies, and study of the fauna and flora of the Irano-Turanian region. Thus, prospects for collaboration in the natural sciences, humanities, engineering, and medical and biosciences are all on the horizon. We invite scientists from all over the world to initiate a collaborative program with our scientists. Iran is ready." (Farhadi, M., Science, vol. 349, p.1029).

Having narrated Minister Farhadi's facts and figures, please allow me to say few words of my own long years of university life, just to have a glimpse at how our higher education and research has developed into what Minister Farhadi describes it today. Before doing so, however, I wish to remind you that I am depending on my recollections of what I have witnessed or have been

involved with. The dates and figures I mention may be not mathematically exact, but they aren't far off.

Tehran University (T.U.) is founded in 1934. Next to it is Tabriz University, 10-12 years later, with a modest beginning with medical and pharmaceutical colleges. By 1950 one also finds medical schools in Shiraz and somewhat later in Meshad. For years these were the main centers of higher education in the country, with less than 20,000 students. The graduating students would become medical general practitioners, engineers, high school teachers, civil servicemen, etc. In its early years T.U. was almost an autonomous university and also a model to be copied by any future center of higher education. By a decree of the government, new centers were to structure themselves like T.U. in admitting students, in their educational programs, in hiring, firing, and promoting faculty members and other supporting staff, etc.

This policy led to some degree of stagnation and inflexibly, preventing the higher education of the country from updating itself and catching up with the rapid advances of the post-2nd worldwide war science and technology on a world scale. The prescription to rejuvenate the universities was to break away from the T.U. model. Shiraz University (S.U.) was picked as a pilot (1962), and transformed itself after U.S. system of universities. By doing so, S.U. brought many changes to the higher education of Iran. For instance, the medium of instruction beside Farsi could also be English. This policy opened the eyes to a wealth of scientific and technological books and journals from international sources and paved the road for alertness and better international collaborations. Another example; S.U. insisted that the promotion of faculty members should strictly be based on genuine research works by the candidate. The time was ripe for this and many similar innovations. The new model was quickly adapted by the 5-6 universities of the time.

Tehran University by 1955 had the rules and regulations for offering M.S. degrees. But it was an option for senior faculty members to admit a student for an M.S. degree or not. Serious and continued effort on the way of graduate studies should be credited to S.U. Since 1966 S.U. has offered M.S. degrees almost in all its departments of science, engineering, agriculture, and humanities. Sharif University Technology did attempt to have M.S. students in physics in 1975 and for two years admitted students, but abandoned it for most of their B.S. graduates were leaving the country, with no one to apply to the program. Similar mass migration of university graduates had already become endemic. It is said, at one time, one whole class of medical graduates of S.U. ended up in New York.

The Ministry of Science and Higher Education was established in 1969-70. One of its earlier programs was to promote collaborations with foreign institutions. A joint Franco-Iranian collaboration began in the city of Hamadan and a German - Iranian one in the city of Rasht. A business school with Harvard was set up in Tehran. All these joint programs were, however, short lived. All ceased immediately after the 1979 revolution and were transformed into regular universities.

In and out of the country, I have a record of 65 years of university life. I have been a student, an educator, a researcher, an institution builder, and a policy and decision maker. My overall appraisal of the higher education system of Iran is as follows: Our universities do reasonably well in training students and doing quality research. This is reflected in the statistics

that some of our learned speakers have presented today and also in the writing of Minister Farhadi. It is also evidenced by the fact that most of our graduates are capable of competing with their international equals. We have drawbacks as well. What we lack has two facets: a) our academia do not know how to put their skills and knowhow at the service of the society; and b) the society is not aware of the potential of its academia and educated youth, and seldom turns to its universities to solve its problems.

The remedy for part (b) is beyond the means of the academia, for the universities are only a small part of a nation of 78 million, and are bound to follow the general trends of the society. As for part (a), at least a partial solution is within reach, and perhaps within the responsibilities of our universities and research institutions. In my opinion, what we presently need is an extensive and extended international collaboration to enable Iran's scientists and students a) to keep pace with the rapid advancement of sciences and technology on a world scale, and b) to learn from their foreign collaborators how to become a problem-solver for the society. My recommendations are:

- Short term visits of one to six months for Iranian scientists to foreign centers of education and research,
- Short term visits of 15 days to few months of foreign scientists to Iranian centers of education and research,
- Short term stays of Iranian students aboard and of foreign student in Iran,
- Joint work between Iranian and foreign researcher,
- Joint training of Iranian students and desirably foreign ones. What I do not recommend are:
- Long term stays of Iranian researchers abroad. For they lose contacts with their home institution and lose the ability to do research with the meager facilitates at home,
- Total training of Iranian students with no connection with their home country. Again for the same reason.

In my opinion, lack of funds is not the number one obstacle of Iranian universities and research centers. They can always host their foreign visitors and fund the travel and other expenses of their personnel and students abroad.

Thank you for your patience.