



Explanation of Evolving Health Technical and Vocational Education and Training System: A National Experience

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Abstract

Around the world, the changing needs of the labor market are met under the umbrella of technical and vocational education and training (TVET). The Iran Technical and Vocational Training Organization (ITVTO) plays this role. However, a significant issue in Iran's TVET system is that the targeting of vocational training has been oriented towards industrial professions while society also needs general and specialized training in health sciences. IN response to needs, the National Center for Technical and Vocational Education and Training of Medical Sciences was established by the Ministry of Health, Treatment, and Medical Education (MoHME) in Iran. This article intends to introduce the TVET system and the National Center for Technical and Vocational Education and Training of Medical Sciences in Iran and discuss its future horizon. Although the beginning of this path is very commendable, the path of evolution for this center will be more difficult because there is a vast world of concepts, phenomena, and problems against the TVET in Iran's medical sciences. However, what can be deduced from the study results is that with a bit of courage, we can say something new and take firm steps to transform.

Keywords: TVET, Health, Technical and Vocational Education and Training, Education

1. Background

Education is any activity or pre-designed strategy that provides learners with learning. It is a continuous process, with the ultimate goal of increasing individuals' abilities, competencies, and information to perform their assigned tasks and personal growth around the changing world (1-3). As a result of changes in human lifestyles, the labor market has different and diverse needs for skilled human resources (4, 5).

Around the world, the changing needs of the labor market are met appropriately and rationally under the umbrella of technical and vocational education and training (TVET) (6-8). Technical and vocational education refers to learning knowledge, skills, and attitudes related to the world of work and include educational activities, internships, and skills development related to the job, production, and livelihood (9-11).

Due to differences in cultural, social, historical, and political backgrounds, different countries have expressed various definitions and terms for these differences (12). In this article, among various definitions, we provide the two most widely used ones in official documents of Iran and world correspondence.

According to the Law of the Comprehensive System of Iran TVET, technical and vocational education and training is referred to as the process of acquiring attitudes, practical skills, and knowledge (acquisition of competencies) related to the occupations of various economic and social sectors along with general education (13). According to the International Labor Organization (ILO) and UNESCO, TVET is a type of education that, in addition to general knowledge, teach practical skills, abilities, and attitudes in all forms and levels of the educational process, including the study of technology and related sciences, acquisition of practical skills, abilities and attitudes, and addressing issues related to employment in various economic and social sectors of life (14-16).

2. Objectives

Due to different countries' cultural, social, economic, and political situations, TVET is also offered with different systems. This article intends to introduce the TVET system and the National Center for Technical and Vocational Education and Training of Medical Sciences in Iran and discuss its future horizon.

3. Technical and Vocational Education and Training Systems

The TVET systems have several categories in different aspects. One of the most common methods of classifying TVET systems, based on the responsibility of training, is as follows:

- 1- Institutional training
 - Provided by the formal education system
 - Outside the formal education system
- 2- Workplace-based training
 - Pre-employment training
 - In-service training
- 3- Combining types of training (Sandwich programs and dual systems) (17, 18)

The TVET systems are also investigated from the public-private partnership perspective, including dual, liberal, and bureaucratic models (19-21). For the education system, TVET follows the three primary types of training: Formal, non-formal, and informal (10, 22, 23). Different countries use a combination of these models under the upstream policies on the education system. Countries such as Germany and Switzerland, using the dual model, are recognized as pioneers in TVET in the world (24-26). In Iran, the TVET system is unique due to its adherence to the general education system. It does not match any of the TVET systems in other countries.

3.1. Technical and Vocational Education in Iran

The principles of TVET in Iran were established by Amir Kabir (1889) with the establishment of the Dar al-Fonun school (22). To understand the situation of TVET in Iran, we must first get acquainted with this system. The Iranian TVET model is unique and uses two formal and informal education systems (Table 1). The Iran Technical and Vocational Education Organization, affiliated with the Ministry of Cooperatives, Labor, and Social Welfare, offers informal technical and vocational education programs (27, 28).

One of the most important criteria for any educational organization is to gain accreditation points. This process is done in the TVET system by completing and obtaining points from the national qualifications framework (NQF) and quality assurance programs. There is no NQF in Iran's TVET system. As the official provider of the TVET system, the Ministry of Education must ensure the quality of the technical and vocational education programs in the formal TVET system through test centers, provincial assessment units, and skill assessment and validation offices.

Under the ITVTO, the Curriculum Development Office is responsible for quality assurance in the informal technical and vocational education and training system and

updating and ensuring the technical and vocational education program (22). Despite Iran's experience in providing TVET and the steps taken in recent years to recognize the importance of the role of vocational training, it should be admitted that these efforts have not been adequate. The studies on the challenges show that the essential vocational training gaps in the country can be summarized in three categories:

- (1) Lack of higher education development model
- (2) Uncertainty about the share of vocational training in the higher education system of the country
- (3) Lack of necessary skills in the graduates of vocational training centers (29, 30).

Based on various studies, the reasons for the failure of the Technical and Vocational Education Organization of Iran in gaining an internationally acceptable position in technical and vocational education can be sought in the following factors:

- Government entry into the implementation instead of policy-making and monitoring
- Lack of consistency of TVET with the real needs of the labor market
- Emphasis on formal education
- Lack of formation of a single policy-making body and the plurality of organizations and institutions involved
- Inadequate credit allocation
- Inadequate equipment and facilities with the needs of the day (31)
- Passive participation of the private sector in TVET
- Inadequacy of rules and regulations (32)

In addition, in the first program on the economic, social, and cultural development of the Islamic Republic of Iran, in the chapter related to planning TVET, it was announced that the training program in TVET suffers inadequacy and disability. Each executive organization uses a cross-cutting solution. In the meantime, no authority has been introduced in the country's executive system as responsible for following up and monitoring programs, and coordination and policy-making mechanisms are inactive (28).

Another major problem is that this organization does not have technical and vocational training programs in the health system and does not offer special courses for empowering the employees of this vast system at different levels. This issue has made Iran's health TVET system unique.

3.2. Iranian Technical and Vocational Education and Training

Due to the urgent need of every society to promote health (33) and the poor performance of graduates of formal and university education systems in the fields of medical sciences, TVET institutions around the world have dedicated part of their training at different levels (34). One of

Table 1. Formal Technical and Vocational Education System in Iran

	Duration	Admission Requirements	Centers	Continue Training
Technical and vocational (Fanni va Herfei) courses offered in the secondary school (ISCED 3)	Three years	Students must have completed the first year of secondary education.	Technical and vocational high schools (Fanni va Herfei) under the supervision of the Ministry of Education	Graduates of technical and vocational courses are encouraged to acquire additional qualifications and skills for decent work in higher-level careers. After taking the entrance exam, graduates receive a technical and vocational diploma and can choose the third-level courses (ISCED 5-8).
Technical (Kar Danesh) courses offered in the secondary school (ISCED 3)	Three years	Students should complete the first year of secondary education.	Technical knowledge (Kar Danesh) high schools under the supervision of the Ministry of Education	Graduates of technical courses (Kar Danesh) are trained to become semi-skilled, skilled, and master employees. They receive a high school diploma (diploma of Kar Danesh), and after the entrance exam, they can pass the third-level courses (ISCED 5-8).
Associate's degree (ISCED 5) and bachelor's degree (ISCED 6) at the higher level (Third)	Two years (four years for a bachelor's degree)	Students are required to have a university degree after Fanni va Herfei, and/or Kar Danesh diploma	Technical and Vocational Universities (TVUs) and Universities of Applied Sciences (UAST), both under the Ministry of Science, Research, and Technology	Undergraduate Student (ISCED 6) can continue the master's degree course offered at the higher education level (ISCED 7)
Master's degree course in higher education (ISCED 7)	Two years	Students must have an associate degree (ISCED 5) and a bachelor's degree (ISCED 6).	Technical and Vocational Universities (TVUs) and Universities of Applied Sciences (UAST), both under the Ministry of Science, Research, and Technology	-

the most critical issues in the Iran Technical and Vocational Education system is that the targeting of vocational training has been wholly oriented towards industry and technical professions. At the same time, society needs general and specialized education in health sciences.

On the other hand, the Ministry of Health, Treatment, and Medical Education (MoHME), as one of the most extensive organizations responsible for the health of society, has a large number of employees in various job categories with multiple duties and roles. However, various studies indicate a gap between the potential of educated employees of health systems and their current performance (35, 36). Research shows that medical graduates believe formal education cannot thoroughly teach them the skills required by the labor market. Most studies show a lack of knowledge and skills among clinicians and managers, an essential obstacle to achieving quality improvement in the service delivery system. Continuing Professional Development (CPD) courses, although showing faster growth than academic education, cannot meet their needs due to limited resources and time, lack of meeting needs, etc. (37-39). The solution to this problem is to have vocational training programs in line with the needs of individuals because aca-

demical training is usually not need-based, and there is usually a gap between supply and demand. Vocational training courses can fill this gap like a bridge (40).

Therefore, the urgent need of the Iranian health system for a TVET system was identified, and the National Center for Technical and Vocational Education and Training of Medical Sciences of the Islamic Republic of Iran was established to compensate for this gap.

3.3. National Center for Technical and Vocational Education and Training of Medical Sciences of the Islamic Republic of Iran

In response to the growing needs of society, the MoHME, citing Article 1 of the Law on MoHME, organized technical and vocational education and training in the health field. In this regard, on Feb. 5, 2017, the statute was intended to establish this system in the framework of the implementation of transformation and innovation packages in medical science education and maximize the efficiency of existing capacities in the country in advancing the TVET system in the field of health. It was approved in session 257 of the Council for the Development of Medical Universities. Accordingly, the National Center of the Technical and Vocational Education and Training of Medical Sciences of the Islamic Republic of Iran opened at the Ministry

of Health and Medical Education headquarters in Tehran during government week 2017. This center is responsible for the leadership, executive duties, and accreditation of the health TVET system. The main goals of this center are:

- (1) Organizing the technical and vocational education of the health system
- (2) Using the existing capacities in the country to train skilled human resources in the field of health
- (3) Establishing an accreditation system for technical and vocational education in health sciences
- (4) Improving the quality of skills and professional training
- (5) Developing technical and vocational education consistent with the needs of society

This center is a member of the Higher Council of Technical and Vocational Education. The MoHME is the representative of this council's right to vote. Nevertheless, in terms of policy-making, management, and execution, it operates independently from the country's TVET system. It represents a significant difference between the vocational education and training system in Iran and other countries worldwide.

According to the data available on the National Center for Technical and Vocational Education and Training in Medical Sciences, by the end of August 2021, 204 centers across the country had been licensed to hold training courses. However, the number of active centers holding several training courses is lower than this.

As it was necessary to evaluate the course, an accreditation system was developed by the TVET team. The accreditation process includes the following four stages:

- (1) Performing accreditation activities
- (2) Performing self-assessment and preparing and sending the reports
- (3) Carrying out external evaluation and compiling the external visit report by the evaluation team
- (4) Issuing an accreditation vote and announcing it to the execution centers

The whole accreditation process is done for 6 to 12 months. In addition to the accreditation process, the Supervisory Committee submits its periodic reports to the Accreditation Commission. The commission also sends reports to the board of trustees of the National Vocational and Technical Center.

However, there is no accreditation program at the institutional and curriculum level. The introduction of the accreditation program is at the final approval stage and has not yet been implemented. There is no report on the quality of the training courses offered.

The credits of this center are also provided as: Relevant row in the annual budget, dedicated revenue, financial grants from public institutions such as the Deputy

for Science and Technology of the Office of the President, and public donations and charitable resources. The dependence of the credit system on the public sector has made the financial resources inadequate.

4. Conclusions

Health systems have played an essential role in improving life and increasing life expectancy throughout the 20th century. However, there are significant gaps between the potential of health systems and their current performance, and countries with similar infrastructures have achieved different outcomes. Accordingly, today we focus on improving healthcare to ensure higher quality, accessibility, and value for revenue. Training programs have been developed to train health professionals by formal quality improvement methods (37, 41, 42).

Although TVET has had no place in the health system for years, the beginning of a difficult path of empowering the MoHME and society employees is very commendable. Suppose we take a closer look, at demographic changes in Iran and the move towards an elderly society that will undoubtedly need significant sources of care, social, political, cultural, and economic dynamics inevitably in societies, changes in the needs of societies, the instability of education and the labor market in the culture of different generations, the changes in in-person and text-based learning methods to distance learning methods, especially with the recent experience of societies in this field, and unpredictable health conditions such as the current world crisis, COVID-19 pandemic. In this case, we should broaden our horizons and look for approaches to strengthen and enhance skills training at the level of society.

Therefore, there is a vast world of concepts, phenomena, and unresolved problems against the TVET in Iran's medical sciences, but what can be deduced from the study results is that with a bit of courage, we can say something new and take firm steps to transform.

The Iranian health system needs an educational design in the TVET system that can break traditions, change habits, and turn stagnation into a flow. Of course, to have an acceptable vocational training system, the following measures should be taken:

- Developing individual, organizational, and social culture
- Designing a need assessment system for the labor market in medical sciences
- Designing a student admission coordination system based on the needs of the labor market
- Restructuring the financial system management of TVET centers by moving towards investment by private companies

- Training teachers and their professional development
- Designing methods of evaluation and accreditation of institutions and curricula
- Using new training methods in the age of technology and reviewing training methods
- Designing and providing the necessary infrastructure to benefit from distance education
- Observing educational justice

According to the experiences and superior features of outstanding technical and vocational education systems in the world, achieving a TVET system in Iranian medical sciences that is person-centered, skill-oriented, job-oriented, community-oriented, and justice-oriented requires fundamental changes and the following perspectives:

- Move from a centralized to a decentralized and participatory education system
- Move from a separate approach to an integrated approach
- Move from a certificate-oriented to a competency-oriented system
- Move from a supply-oriented to a demand-oriented system
- Move from a formal education system to a combined approach of formal and informal education
- Move from a traditional education system to a technology-based integrated approach
- Move from an unfair education system to a justice-oriented education system.

Footnotes

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