

REVIEW ARTICLE

A Viewpoint Toward Technical and Vocational Education for Industrial Development and Creation Employment in Iran

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ABSTRACT

There is a range of reasons why leaving the provision of education to the market may result in a misallocation of the service to society. For many years, the orthodox view among economists has been that the state should take the major responsibility for both financing and supplying educational services. In recent years, the debate on the knowledge based economy has drawn more attention to vocational education. Education is decisive for the development of the personality and the participation of the individual in the society. It is an indispensable condition for the ability of a modern and democratic society to face the future. Furthermore, education decides on the innovation and competition ability of the economy. Only those national economies investing in the knowledge of individuals will be able to overcome the transition to the information and media society. In the last decades the need for skilled labor has increased significantly; simultaneously a drop in the demand for unqualified employees could be noticed. The cost pressure on companies has grown and this caused endeavors to reduce the costs without paying the price of quality loss were made. The tendency from a strictly vocational-oriented and functional division of labor to one that is orientated towards processes is unmistakable. The process-oriented work routines stand out due to co-operative activities varying again in type and duration. The changes culminate in new demands on future employees and also find expression in conceptions of vocational education; the vocational school has the responsibility to develop vocational flexibility for coping with the changing demands of the world of work and society. In this aspect, the consequences on the work organization are logical. The context not only the content of learning is important, but also the way it is learnt. Therefore, the vocational school has not only the responsibility to teach vocational and general learning contents, but also to enable the learner to think and act independently and responsibly considering the demands of the vocational education. The insight that the modern world of work requires the entire personality already found expression in the pedagogy decades ago. the skilled worker who in the future only has to offer his physical strength will not meet the requirements of a modern world of work, because the machine has taken over a lot of his performance. This article is part of a research that by author had been done in Organization of technical and vocational educations of South-Khorasan Province-Iran.

Key words: Development, employment, industrial demand, technical and vocational education, Iran

INTRODUCTION

Human capital has been emphasized as a critical determinant of economic development. In addition,

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it exerts a significant influence on social and political issues, such as fertility, the education of children, and democracy. Since human capital is multifaceted and includes a complex set of human attributes, it is difficult to precisely and quantitatively measure; as such, many have used educational attainment as a proxy and attempted to measure it across various populations.^[1]

Education and occupation are correlated in many ways and this connection is not a pre-determined one. Both systems complete each other and have relationship in an active way. The quality and quantity growth of coordinated and suitable relationship of the two is some type of progress that manifests their efficiency in the entire social system. In order to determine the structure of occupation demands to manpower, evaluation of the past and present condition, and information on the growth procedures in different sectors of the country, production methods and their range of application is a necessity. All those relationships require a precise knowledge on the educational structure of human forces to occupy social jobs. The demands structure of people in a society and the educational structure of human forces for work market could be useful in most optimum way if the planning made for the two is coordinated, related and balanced. In future years, the impacts of scientific and technology improvement in social-economic growth will be a definite factor and this reveals essential quality changes in the whole process of production and service provision in the societies. Obviously, the growth resources of a society undergo increasing changes and this does not depend on expansion of quantitative sources but rather to a constant increase in the efficiency of planning and individuals.^[2]

There is a range of reasons why leaving the provision of education to the market may result in a misallocation of the service to society. For many years, the orthodox view among economists has been that the state should take the major responsibility for both financing and supplying educational services [Figure 1].^[3]

An enterprise's productivity is closely correlated with its people and strategies; therefore, a forceful human resource management system is the most valuable asset of the current century construction companies.^[4]

Work is a major feature in most people's lives. Not only does it provide them with the means to meet basic needs, such as food, clothing and shelter, but also the type of work undertaken by individuals and groups has a major impact on their self-identity, social status, and standard of living. Technical and vocational education and training (TVET) is concerned with the acquisition of knowledge and skills for the world of work to increase opportunities for productive work, sustainable

livelihoods, personal empowerment, and socio-economic development (Rupert Maclean and David N. Wilson).^[6]

Main policies in technical and vocational education (TVE) are also motivated by other factors. TVE is seen as a means of providing a second chance to secondary school drop-outs, offering an alternative to university education, and combating youth unemployment and poverty. This great diversity of objectives makes TVE policies complex to implement and difficult to assess. In the wave of public sector reforms, many governments have decided to reshape vocational education institutions to make them more efficient and effective. Mergers have often been used to make state providers stronger. An on-going reform in Iran provides an interesting illustration of this approach.

A review of secondary education in industrialized countries shows that the structure of the system at this level remains very diversified, particularly regarding vocational education. Many countries combine vocational schools with dual forms of training such as apprenticeship. Despite wide diversity, some common trends emerge. In efforts to provide skills for all, attention has turned to TVE programs for women and young people at risk. Access by women and girls is often problematic due to their overconcentration in "feminine" subject areas and low levels of training. Equity should be a central concern of TVE policies to meet the needs of vulnerable women and girls.^[7]

FORMATION OF THE TECHNICAL AND VOCATIONAL TRAINING ORGANIZATION (TVTO) OF IRAN

The roots of the formation of the TVTO of Iran go back to the approval of the internship and skills increase regulations on January 17, 1961 by the Supreme Labor Council of Iran.^[8]

After Iranian Revolution, the organization was formed in 1980 by merge of three educational units include the General Directorate of Vocational Education of the Ministry of Labor and Social Affairs, the Internship Fund and the Internship Center, called the Technical Education and Manpower Organization. In 1981, it was renamed to current name TVTO of the country.^[8]

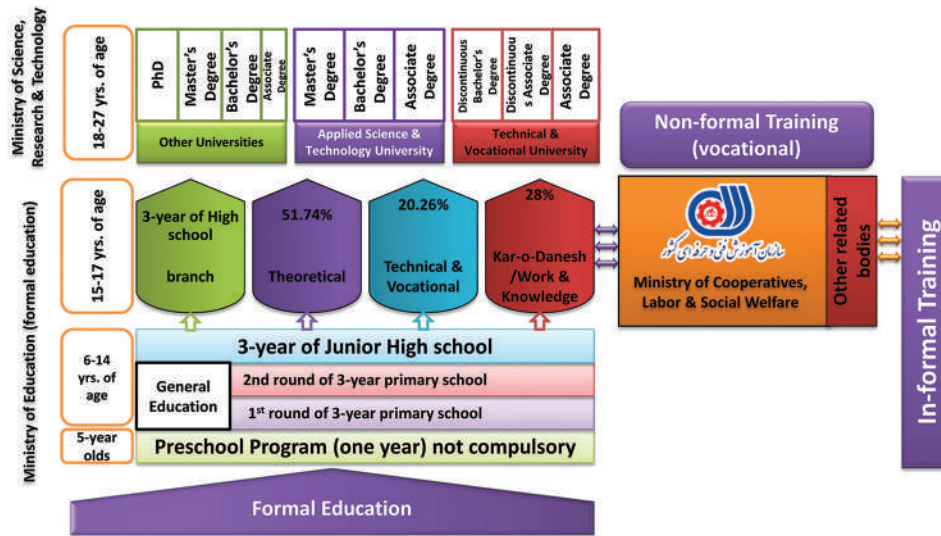


Figure 1: Structure of formal and non- formal education system in Iran.^[5] (Oct 11, 2022)

Structure

The Iran TVTO is one of affiliated government agency of the Ministry of Cooperatives, Labour, and Social Welfare and it consists of the following three main cores:^[7]

- Deputy of Education
- Deputy of Research and Planning
- Deputy of Administrative and Support [Figure 2].^[8]

The Main Mission

The main mission of the organization is skills training, research, production of educational standards and labor force evaluation. The TVE Organization of the country, with the help of 552 permanent training centers and with the support of 11,700 private schools and 21,000 instructors, annually provides educational services to approximately 1.5 million people in both the public and private section.^[8,9]

The Target Groups

The target groups of the organization for skills training are: Job seekers, employees (enterprises - unions and guilds), students and university graduates, conscripts, residents of deprived and country borders areas, vulnerable groups (Including female-headed households and working children), housewives, people with disabilities, villagers, nomads, prisoners and their families, recovering addicts, the socially

disadvantaged, foreign nationals and refugees, and educators from other countries.^[8,9]

Instructor Training Center (ITC)

The Instructor Training and Research Center (ITC) of the organization is one of the unique educational centers in the Middle East which through its 16 specialized departments, acts as a research and development unit of the organization and prepare background to transfer knowledge and application of new technologies.^[10]

The International Arena

So far the organization has managed to holding 18 national skill competitions with the presence of more than 10,000 competitors from all over the Iran country. These acts led to prepare the national skills team and finally 9 participations in international competitions.^[8,9]

For example, in Australia as a very successful country in development TVE programs; however, it is the addition of clauses and expectations within privately won contracts that has developed a regime of a “set of deliverables” to Government. The trend away from a mere obligatory provision of services to an “outcomes driven” process through the provision of monetary contracts is occurring at all levels of Government. This is demonstrated in the development of the Australian Technical Colleges

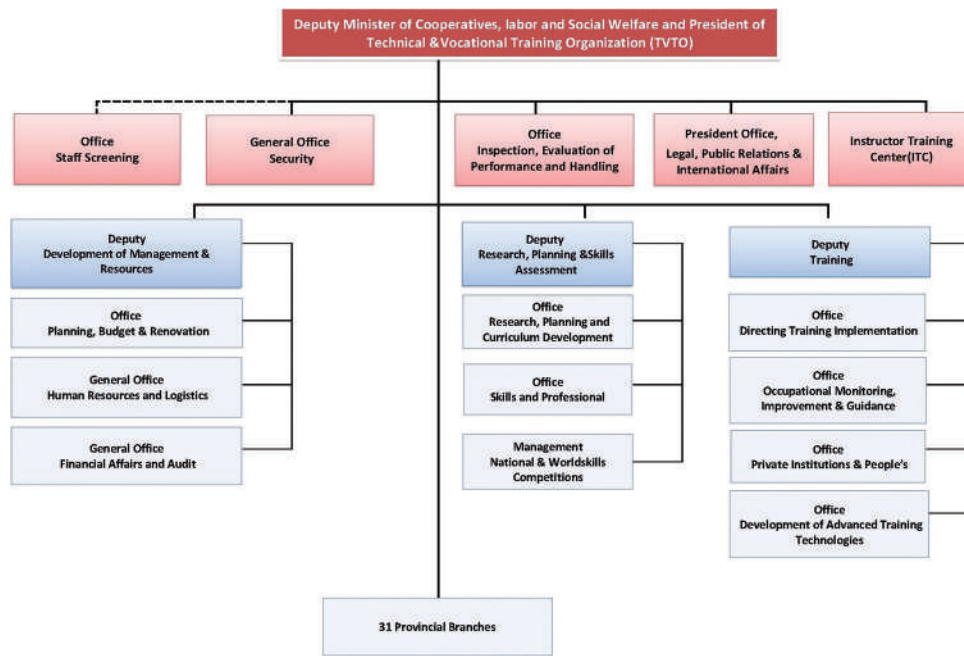


Figure 2: Formal chart of Technical and Vocational Training Organization in Iran.^[10]

as an Australian Government initiative which is part of the suite of strategies designed to address the current and future skills needs of the Australian economy. This principle objective is achieved through of a number of key goals, such as:^[11]

- Promoting pride and excellence in trade skills training for young people;
- Providing skills and education in a flexible learning environment;
- Having an industry-led governing body for each Australian Technical College which sets out its strategic directions and performance objectives;
- Providing trade training that is relevant to industry and that leads to nationally recognized qualifications through School-based Apprenticeships, and providing academic and vocational and technical education which is relevant to trade careers and leads to a year 12 certificate.^[11]

The Australian Government has developed this as a strategy and has partnered with a range of stakeholders to deliver the Australian Technical Colleges as Colleges for students in Years 11 and 12. Students who study at these Colleges enter into an Australian School-based Apprenticeship in a trade at the Certificate III level, which leads to a nationally recognized qualification; study academic subjects, leading to a year 12 certificate; and also

gain IT, employability and business skills, enabling them to run their own business if they desire. They can also keep the option to go on to further study at university. It is argued that the colleges provide an incentive for more students to stay on at school and encourage more students to pursue a trade qualification and that the colleges expand student choice by providing another pathway to a career involving trades. In addition, facilities and educational services offered by the colleges are high quality, establishing them as centers of excellence in trade training, thereby raising the profile of vocational and technical education in schools and strengthening the training system as a whole. The Australian Government espouses that the colleges play an important role in expanding Australian School based Apprenticeships, particularly in the traditional trades areas.^[11]

The key role of education and training in national development has been universally recognized. TVET is one of the most productive elements of education. In addition to preparing individuals for the world of work by teaching them the skills and competencies needed for economic competitiveness, TVET also assumes a degree of responsibility for the personal development of its learners, and for their effective participation in society. The meaning and the practice of work in knowledge economies and in globalized networks of production and trade are changing. The



Figure 3: (a-j) Visiting of author from some computers and internet site and educational aids in Iranian TVE system in branch of South Khorasan Province in -East of Iran (By author, Aug 28, 2012)



Figure 4: (a and b) Some computers and internet site and educational aids in Iranian TVE system in branch of South Khorasan Province in -East of Iran (By author, Aug 28, 2012)

need for a highly skilled and productive workforce is shaping economies all over the world. To increase their chances for employability, young people and adults need skills that are flexible and relevant to the demands of today's societies, where individuals must possess a combination of knowledge, practical and social skills and positive attitudes, as well as the ability to think and act independently, creatively, and responsibly. If TVET is to meet such diverse expectations, substantial changes are required, and



Figure 5: (a-d) Students of mechanic course in work with modern automatics machines in Iranian TVE system in branch of South Khorasan Province in - East of Iran (By author, Aug 28, 2012)

education and training systems should be re-oriented in such a way as to impart a broad range of life skills. Transformation of teaching and learning in TVET

is thus needed. Traditional teaching and learning models, which convey a formal, abstract process, are often far removed from the specificities of real world practice. The method of Action Learning, the theoretical bases of which are introduced in this publication, is an approach to work-based learning that was pioneered by Professor Reginald Revans, UK, in the 1960s and has spread around the world. Action Learning provides a tried and true method of accelerating learning that enables people to handle difficult situations more effectively. This approach to learning is considered by some to be one of the most important ideas to have emerged in management and organizational development over the last 40 years. Action learning advocates

questioning and reflection to prompt a deeper level of analysis, to test assumptions, and to explore possibilities. Within a group, work-based problems are discussed and reframed in a learning context. Through sharing experiences and advice, action is suggested and solutions discussed. In this way, learning from shared experience provides innovative solutions and assists individuals and organizations adapt to a rapidly changing world. Subsumed into the learning activities, this method provides enhanced possibilities for personal and professional development of the individual and can also help improve economic productivity and stimulate economic development.^[11]

A high skill level of the workforce is considered to be an important condition for continued socio-economic growth. Not only does it stimulate welfare at the macro level, but good training and a decent set of skills contributes to individual employment security as well. In addition, training increases flexibility, in different ways. One of the mechanism through which better training can increase worker's employment security is by increasing their chances at internal and external job mobility – and thus, by enhancing their potential external flexibility. In addition, a better skilled workforce is considering to greatly benefit firms by



Figure 6: (a and b) Some educational aids and students of mechanic course in work an educational workshop in Iranian TVE system in branch of South Khorasan Province in -East of Iran (By author, Aug 28, 2012)



Figure 7: (a-k) Some field research pictures from educational processes and aids and heir students of various courses in Iranian TVE system in branch of Isfahan province in - center of Iran (Figure 7a-h, by author, 2022. Figure 7i-k by author, in an international congress in Thailand, with attendance professors and experts in field of TVE from India and other countries, 2012)



Figure 8: Author with his students in M.Sc. and Ph.D. course from Iran and Afghanistan - in agricultural extension and education course in their final exams. Plus, some pictures from dormitory of students and Jujube garden near Bagheran mountain - in the Islamic Azad University_ Birjand Branch – Birjand, Iran. (Jan 31, 2023 and Feb 2, 2023).

increasing their internal flexibility in the deployment of that workforce, allowing them to react swiftly and decisively to changing external market circumstances [Figure 8]. Because training can, at least theoretically, simultaneously strengthen the employment security of citizens and the (internal) flexibility of firms, (education and) training institutions can be seen as a flexicurity arrangement.^[12,13]

STRENGTHENING TVE PROGRAMS IN IRAN

- “There should be a balance between theoretical and practical work ” Recognized as the “master key to sustainable development” Strategy in the attainment of the: Education For All global movement Millennium Development Goals.^[14]
- “Bring back technical-vocational education in the public high schools to better link schooling to local industry needs and employment”.^[15]

In recent years in Iran launched a reform initiative towards strengthening the technical and vocational high schools conducted a rapid assessment of all technical and vocational high schools that contribute in solving the mismatch in the labor market provide the youth with relevant and certifiable skills Link basic education to post-secondary and/or higher education which provide high school graduates with opportunities to acquire certifiable vocational and

technical skills that would allow broader options in pursuing their post-secondary career whether this is a college education, short-term technical courses, entrepreneurship or apprenticeship leading to eventual formal employment [Figure 3].^[9,10]

TVTO IN IRAN

TVTO affiliated to the Ministry of Cooperatives, Labor and Social welfare was founded in 1980 by integrating three training bodies- MOLSA’s General Directorate for Vocational Trainings, Apprenticeship Fund and Apprenticeship Society - as Technical and Human Force Training Organization. Later in 1981 it was renamed as Technical and Vocational Training Organization. According to more than 10 related laws and 151 Articles of The Third Development Program and its confirmation in Fourth Development Program, TVTO is the main institution in charge of short-term Technical and Vocational Trainings. It is also the Head of Special Committee on non-formal Technical and Vocational Training with 16 members from various ministries, organizations; Employee and Employer Associations. TVTO implements its trainings through both public and private sectors.^[5] TVTO’s main task is providing vocational training and research through 1–18 months courses in: Permanent centers of the public sector (600 centers-nationwide), mobile training teams (in remote areas), training in prisons, training in garrisons, training in industries,

training in ITC, and private training institutions (14 thousand institutions authorized by TVTO). TVTO trains skilled and semi-skilled labor force which is needed by industry, agriculture and service providers throughout the country, and improves the culture of getting technical skills in the society.

TVTO has continuously developed communication with international Institutes like ILO and WSI, to achieve the latest sciences and technologies and keep step with international standards.^[5,8]

Research, as one of the main tasks of TVTO, deals with major challenges between training and labor market and industries. Through research, TVTO tries to deeply understand the industries and the skills they need, collect the information required for skills training curriculum development, training software and hardware, training aid; and study the existing training systems in other local and global institutions, study and suggest the labor force replacement trend, upgrade the workers' skills and set up unions for technical and vocational trainers to attract their participation.

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SECONDARY EDUCATION AND (TVE) IN IRAN

Depending on their tested aptitudes and potential, at this point students may choose to pursue one of two possible courses of study: The theoretical branch, or the TVE stream.

The theoretical branch is comprised general academic disciplines such as mathematics, physics, empirical sciences, human sciences, and economics.

Students in this curriculum must take 63 units of general study and an additional 36 units in one field of specialization. After completing this track, they take the national examinations and, if successful, are awarded the Diplom-Motevaseteh making them eligible for the pre-university course a one-year program designed to prepare them for university. Successfully completing pre-university study earns them the Pre-University Certificate and the right to take the Konkur, or National Entrance Examination. The vocational and technical branch (TVE), Kar-Denesh (knowledge-skill branch), and the integrated associate degree in the technical and vocational stream comprise the technical/vocational track of Iranian secondary education. The vocational and technical branch students take applied science courses designed to train them in the agricultural trades. Here they can earn a trade certificate. The Kar-Denesh track develops semiskilled and skilled workers, foremen, and supervisors who can earn second-degree skill certificates. The integrated associate degree is a 5-year course following lower secondary education designed to develop highly skilled technicians. These students may also opt for the pre-university stream after 3 years in the program. In 1986, the Ministry of Education listed 30 fields of study in the TVE system and over 400 in the Kar-Denesh.^[5,8,9]

Teaching hours at this level range from 30 to 32 and curriculum varies significantly depending on the individual student's field of study or vocational path.^[5,8]

COMPETENCY-BASED CURRICULUM AND INSTRUCTIONAL IN EUROPE AND IRAN

In this aspect, TVE programs and learning materials must be containing and get attention to following aspects in their educational goals for students:

- Capacity Building Programs
- Provision for Tools and Equipment
- Provision for Infrastructure/Facilities Support
- Provision for Competency Assessment Subsidy (CAS)
- Provision for Additional Teacher curriculum Items
- Provision for Increased Teaching Materials and Audio- Visual Aids
- Policy Support/Research and Development, and finally

- Monitoring and Evaluation.

There is also a need to develop diverse multiple links and mutually beneficial strategic partnership with the industries and other relevant partners to enhance technical skills advancement toward following items:

- Integrated skills development
- Honing of talents
- Up-skilling, and multi-skilling of graduates
- Employment/entrepreneurship
- Work force mobility
- Entry in higher education.^[5,8,9]

These minimum accreditation and quality assurance in vocational education and training as quoted in selected European approaches quality standards apply to three major types of training and vary accordingly:

- A. Full-time initial training and apprenticeship training for students up to the age of 18 years;
- B. Higher training: All initial training pathways for students over 18 years of age;
- C. Continuing training, which also includes apprenticeship training for students over the age of 18.^[5]

The minimum requirements that training providers must fulfill to be accredited relate to the following aspects in selected European approaches:

- A. General management of the institution;
- B. Financial situation of the institution;
- C. Staff characteristics for teaching, training and administration;
- D. Effectiveness and efficiency of previous training activities;
- E. Links and contacts (to schools, employers, employment services, municipal authorities, NGOs, etc.) at local level.^[5,8,9]

For each of these five criteria the national decree sets down quantitative and qualitative indicators that have to be measured and assessed, parameters stating the level of the quantitative data and the characteristics of the qualitative information, and indices setting the thresholds of the quantitative parameters or fixing requirements and conditions for the qualitative parameters. It is up to the regional governments to assess whether these requirements are fulfilled. Only the TVE providers that can successfully demonstrate that they achieve the minimum level required are allowed to take part in

regional tenders. They enter a regional register of accredited institutions that is updated each year and vocational training activities will only be assigned to providers appearing in that register.^[13]

In a country as diverse as Iran, it is inevitable that the improvement of TVE has taken place unevenly. Some schools have been able to benefit from the project results, while others are still struggling. There are still major challenges to be met within the field of:

- Continuance of capacity building of social partners in a sectorized approach;
- Regional and local collaboration between TVE schools and industry;
- Awareness raising for the importance of labor market research;
- Modernization of the apprenticeship through introduction of work based learning in priority sectors;
- Quality assurance of the work placements (i.e., by implementing an accreditation system of certified work placement companies);
- Training of mentor coaches in these work placement companies;
- Quality assurance of assessment and certification;
- Continuance teacher Training and vocational guidance [Figures 4 and 5].^[4]

MATERIALS AND METHODS

Type of the research is mainly qualitative. Statistical society of the research include managers, teachers and students in the TVEs organization in South-Khorasan Province-Iran and also include managers and staff of working associations in courses that their branch are available in the TVEs organization in South-Khorasan Province such as working associations in mechanic, and electricity power. type of sampling for students is random systematic and for parts of statistical society of the research is census. All of the pictures of this article have been gathered by author in 2012 year with personal attendance of him in Organization of TVEs of South-Khorasan Province- Iran. Also researcher made and used three types of questionnaires for gathering viewpoint of his selected samples from statistical society of the research. Another instruments for gathering information that used by the researcher

were interviewing with selected samples and secondary sources of data such as annual reports that are available in the TVEs organization in South-Khorasan Province, etc. Furthermore, observation and participation of author were two important another important tools for gathering information. This article is part of a research titled: ((Recognition effective factors on employing skill learned persons in TVEs in South-Khorasan Province-Iran, for introducing appropriate approaches)) that by author has been done from 2011 in Organization of TVEs of South-Khorasan Province - Iran.

TVE IN IRAN

TVTO affiliated to Ministry of Labor and Social Affairs (MOLSA) was founded in 1980 by integrating three training bodies- MOLSA's General Directorate for Vocational Trainings, Apprenticeship Fund and Apprenticeship Society - as Technical and Human Force Training Organization. Later in 1981 it was renamed as Technical and Vocational Training Organization. According to more than 10 related laws and 151 Articles of The Third Development Program and its confirmation in Fourth Development Program, TVTO is the main institution in charge of short-term Technical and Vocational Trainings. It is also the Head of Special Committee on non-formal Technical and Vocational Training with 16 members

from various ministries, organizations; Employee and Employer Associations. TVTO implements its trainings through both public and private sectors.^[5,10] Main Tasks of TVTO are as following:

- Providing skills standards (profession and training) for all existing trades in the country (in large industries, inter- industries, and special enterprises)
1. Reviewing skills standards frequently based on technological developments and workplace complexities
 2. Providing assessment standards for all trades
 3. Observing the implementation of the standards based on professional qualifications
 4. Frequent monitoring of the standards to update them according to the stakeholders needs.^[5,10]

Before The Great Islamic Revolution of Iran the first round of skill competitions was held by Ministry of Labor and Social Affairs (MOLSA) between skilled workers and young technicians in 1972; then later on, an Articles of Association for holding the annual skill competitions from 1972 until 1979 was approved. Then the competitions were held annually until 1979 [Table 1].

After Great Islamic Revolution of Iran, in 2000, TVTO was the organization put in charge of resuming the skills competition. The competitions were held for the youth below 22 years age in three phases: City, Provincial and National. The Winners of National Skills Competition take part in a preparation camp in

Table 1: Statistics of international situation of technical and vocational education in Iran (before Islamic revolution 1978)^[5]

Year	Host Country	Date	Participant Countries	Competitors	Trades	Iranian Competitors	Medals and Medallions
1975	Spain	September	17	293	31	8	One Medallion
1977	Netherland	July	17	291	34	10	-
1978	Korea	September	14	245	33	13	-

Table 2: Statistics of National Skills Competition of technical and vocational education (TVE) in Iran (2000-2007)^[5]

Competition	Year	Town Level Competitors	Trades	National Level Competitors	Male Competitors	Female Competitors	The Average Competitors in Each Trade
1 st	2000	5162	35	369	111	258	10/54
2 nd	2001	14599	52	598	184	414	11/5
3 rd	2002	24154	54	816	234	585	15/11
4 th	2003	10700	20	345	36	309	17/25
5 th	2004	3800	20	411	58	353	20/55
6 th	2005	10500	20	413	53	360	20/65
7 th	2006	12131	23	481	68	413	20/91
8 th	2007	13443	25	551	102	449	22/04
9 th	2008	2228	26	495	95	400	19/04

two preliminary and specialized phases and the selected people are dispatched for World Skills Competition as National Skills Team of Iran [Table 2].^[5,10]

APPRENTICESHIP FOR UNIVERSITY GRADUATES

“The Project for University Graduates’ Apprenticeship” is one of strategic plans of TVTO for which Deputy of Modern Skills is responsible to manage, program, monitor, and assess the process of its implementation in sectors including Industry and Mining, Cooperatives, Commerce, Roads and Transportation, ICT, Housing and Construction, Oil, Gas and Petro-chemistry for 40 thousand applicants. All applicants are provided with a 120-h course for job preparation.^[5,10]

ENTREPRENEURSHIP (KAB)

Supported by ILO and ITC ILO, KAB as successful entrepreneurship training is provided to develop entrepreneurship skills of TVTO trainees as well as their employability. This model which is being customized and implemented in 26 countries has many advantages. To conduct the model in Iran the experts from Turin International Training Center were invited, technical meetings were held and finally the courses were ready to be implemented according to provinces’ needs. At the moment, the training courses are being conducted in ASD and public centers of the provinces.^[5,10]

TRAINING THE EMPLOYEES

Continuous technological development and its complexity require training specialized human forces. The experts believe the organizations consistency and survival in today’s highly competitive atmosphere depends on the human forces that are capable of meeting the needs of their organization and society.^[5]

ITC

The next training implemented by TVTO is training technicians and instructors to provide a training board needed by the industry and the vocational training centers throughout the country. This training

is implemented in ITC in Karaj City. ITC is a unique training center in the Middle East, having special equipments and facilities. This training center continuously observes and assesses the modern technologies in industrial sector of the country and tries to provide the know-how on using modern technologies and methods of distributing them.^[5,10]

MAJOR ACTIVITIES OF ITC

Training the instructors required by technical and vocational training centers, centers nearby enterprises, industries, and private sector institutions that doing following affairs:

- Planning and implementing the retraining courses for instructors to adapt their knowledge with new technologies
- Assessing the skills of the workforce in industries; planning and implementing courses for skills upgrade
- Offering training courses to neighboring and friend countries
- Research projects regarding technical and vocational trainings
- Communicating with universities to pave the ground for apprenticeship, practical training of the university students for using training centers facilities
- Supplying and producing training aides needed for different trades
- Implementing international welding courses (training the welders/welding instructors)
- Conducting National Skills Competition.^[5,10]

TRAINING DEPARTMENTS IN ITC

ITC meets the need of industries and training centers for instructors by 17 specialized training departments: Electricity, Automobile Technology, Welding, Machine Tools, CNC Milling/Turning, Wood Industry, Installations, Electronics and pneumatic Hydraulics, Designing and sewing technology, Educational Technology (Audio - Visual), IT, Drawing and Graphics, Basic Skills and Supervising Sciences, Foreign Languages, Industrial Automation, Modern Skills, Agriculture, Food Industry, and Rural Skills (ITC in Iran).^[10]

TRAINING APPROACHES IN TVE IN IRAN

Training in the Permanent Centers of the Public Sector

These trainings, generally considered as basic and specialized trainings, are usually conducted in workshops and centers equipped with special tools and machinery which are installed in permanent sites. At the moment, TVTO has 588 centers throughout the country out of which 265 centers are for men, 175 centers are exclusively for women, and 148 centers are co-ed. Annually more than 4000,000 people are trained in these centers.^[5,10]

Training the Villagers

Rural training units are planned to fill the training shortages in regions with remote permanent centers or with no permanent centers, because establishment of permanent centers require huge investment which is not economically justified in such areas. Each of these mobile units – supported by other governmental institutes - consists of one or more instructors specialized in various trades, automobile equipments, tent, trailer and related training equipments and provides skills training in rural areas. Every year nearly 250,000 people are trained in mobile centers.^[5]

Training the University Students in Permanent Centers Which are Located in Cities, Nearby Dormitories or Inside the Universities

Given the importance of skills training for university students and graduates and in order to use facilities and potentials existing in universities and Technical and Vocational Training Organization, TVTO has established 70 training centers called ASD (nearby universities). At present, ASD centers are providing courses such as job preparation, Entrepreneurship based on KAB module (know about business), non-technical modern skills including management, business, specialized software. By signing an MOU, modern skills training in trades such as Mechatronics, Nanotechnology, Biotechnology, and Multimedia could be provided for university students and Provincial Offices in public centers of TVTO.^[5,10]

Training Modern Technical and Non-technical Skills to Managers of Economical Enterprises and University Graduates

These trainings are provided to supply specialized workforce and improve the skills of the people involved in Science, technology, Developed Industry, Management, Entrepreneurship. Receivers of these trainings are mostly university graduates and Managers of economical and industrial units.^[5]

Training in Industries

A portion of TVTO's training courses are implemented under training in industries, which is specialized for employed people of the labor market, and for supporting labor force and improving their skills in accordance with modern technologies in the following frameworks:

- A. Training in centers adjacent to industrial zones and inter-corporations centers:
These training centers, which are aimed to develop technical and vocational trainings and provide skillful human force needed by industries, are established and run by employers. The centers provide courses on needed trades under supervision and direction of provincial offices. The centers adjacent to industrial zones are independent from production lines and have their own training equipments. These kinds of centers can be established and run by one or more corporations. Inter-corporations centers are established by giant industries between two manufacturing company to train the vocational skills.
- B. On the Job Training: This kind of training is implemented in the workplace, without detaching the worker from his task, to improve the skills of the workers in the industry. Annually more than 190,000 people are trained by these centers.^[5,10]

Training in Private Institutions (Private Sector)

Authorized by TVTO, currently, 15000 in Iran. Annually more than 2 million people are trained in private sector institutions. In other words

Table 3: statistics of students in vocational schools in Iran (before 2005-2012)^[9]

Year	Percentage of students in vocational schools in Iran
Before 2005	36
2005	33
2009	34
2010	35
2011	38
2012	45

private sector institutions have significant share in providing training services in Iran which amounts to 70%.

A Private Training Institution is the institution established and run by private sector, authorized and regulated by TVTO. The authorization is based on the Regulation for Establishing and Running Private Training Institutions which was approved by the cabinet in 2000. The private training institutions implement the training courses according to curriculum and skill standards approved by TVTO and provide the training elements required.^[5]

The necessity of providing technical and vocational trainings for all groups of the society requires vast facilities which are not possible to provide through government resources. According to the note 111 of labor law of Islamic Republic of Iran and Regulation for Establishing and Running Private Training Institutions, TVTO is allowed to establish Private Training Institutions with private sector support and management. Authorized by TVTO, currently, 14000 institutions are providing training services in Iran.

Private Training Institutions are classified as:

1. Advanced Technical and Vocational Training Institutions
2. Basic Technical and Vocational Training Institutions [Figure 6 and Tables 1-3].^[5,10]

THE ADVANTAGES OF TVTO'S SKILL CERTIFICATE

There are regulations for recognition of periods spent in vocational training, something which is clearly stated in The Labor Law of Islamic Republic of Iran:

- 1) Based on category and time of the course, Skill Certificates are issued by TVTO, which are

equal to the work experience. According to Job Classification Program 1-h training is equal to one tenth point.

- 2) If a job seeker needs more work experience to be qualified and holds a skill certificate which according to the committee's approval is related to the job, then his certificate is considered as work experience.
- 3) In job promotion, which is based on job promotion regulations, holders of skill certificates are preferred.
- 4) Specification of vocational courses and their experience equivalents:
 - A. 18 month specialized vocational course implemented in ITC equal to 8 years of experience
 - B. 18 month specialized vocational course for skilled workers equal to 7 years of experience
 - C. 9 month vocational course skilled worker grade 1 equal to 6 years of experience
 - D. 6 month vocational course skilled worker grade 2 equal to 4 years of experience.^[5,10]

CONCLUSION AND RECOMMENDATIONS

Education has been considered as the most basic factor of sustainable development in our country. Increasing acceptance of education at all levels increases the need to pay attention to superior quality, effective management and adaptation of education to the needs of society and the characteristics of the 21st century. Development of TVE needs special attention due to the limitations of universities and ways to achieve higher education and the need for youth employment, and especially the unemployment of university graduates. In addition, at this time, special attention should be paid to technical and vocational training as the main weapon of global competition. In addition to the secondary and associate level, technical and vocational training programs in Iran have been officially upgraded to the level of bachelor degree. Social demand for these trainings, especially at the associate level, has led to areas of development and special attention to these trainings. Given the importance of endogenous development and reliance on domestic forces in various aspects of economic,

social and cultural development as a result of sustainable development, training skilled, and efficient forces that can accelerate the movement of economic wheels and the country from dependence on skilled forces and foreign expert, technical, and vocational training is of particular importance. But technical and vocational training can claim to fulfill this mission when its products are in harmony with the needs of the labor market, both quantitatively and qualitatively. In other words, the technical and professional graduate has been trained in the fields that the labor market needs and is equipped with techniques and skills that can meet the needs of companies and employers.^[5,10]

There is a range of reasons why leaving the provision of education to the market may result in a misallocation of the service to society. For many years, the orthodox view among economists has been that the state should take the major responsibility for both financing and supplying educational services.^[3]

Worldwide, governments are renewing efforts to promote vocational education, with the strong belief that skill formation enhances productivity and sustains competitiveness in the global economy. According to results of an official survey that have been taken by TVTO from each ten persons that graduated from vocational schools, nine of them directly absorbed as labor force in market, whether this statistics for graduates in higher education system in Iran is very fewer and because of this matter in recent years about 45% of students in point of time high school going to vocational schools in Iran and under programs of Ministry of education this statistics will be received to 70% until 2025. Ministry of education have been established 1200 vocational schools from beginning of 2012 and according to his plans number of vocational schools will be increased to 6700 until end to 6700 in Iran.^[9] Insistence of Ministry of education caused absorbing attention of students toward vocational schools. Whether statistics of students in point of time high school had been gone to vocational schools in Iran decreased to 33% in 2005, but by efforts of Ministry of education this statistic increased to 45% in 2012 [Table 3].

In recent years, the debate on the knowledge economy has drawn more attention to vocational education. State policies in TVE are also motivated

by other factors. TVE is seen as a means of providing a second chance to secondary school drop-outs, offering an alternative to university education, and combating youth unemployment and poverty. This great diversity of objectives makes TVE policies complex to implement and difficult to assess. In the wave of public sector reforms, many governments have decided to reshape vocational education institutions to make them more efficient and effective. Mergers have often been used to make state providers stronger.

In this order for strengthening TVET in Iran, summary recommendations for future policy and strategy are as follows:

- Increasing and strengthening educational instruments and tools in vocational schools for improvement quality of these educations;
- Providing conditions for continuing in higher education for graduates of vocational schools;
- Increasing course of studies in various branches (e.g., different branches in agriculture, industry, and services) in vocational schools;
- Increasing considerable amount in budgets in vocational schools (shortage of budgets is the main problem in vocational schools as responsible in this domain said).^[9]
- Prioritize reform/strengthening of assessment/ accreditation;
- Establish School Management Boards with employer/social partner representation;
- Take further steps to modernize facilities/ equipment – especially in non-pilot schools that did not benefit from material support;
- Continue to address ongoing teacher training needs;
- Develop stronger TVE information systems – labor market research for qualification needs and qualified staff and on student tracking;
- Further modernize the apprenticeship sub-sector by introduction of modern way of work based learning;
- Introduction of a system of certified work placement companies and qualified mentor coaches in these companies;
- Continue to address gender differentials;
- Continue to strengthen vocational guidance mechanisms;
- Continue to promote lifelong learning.

Also, governors must consider following items:

- Increasing in part-time and adult participation in TVE schools;
- Better use of general schools, evenings,
- Weekends and holidays: for lifelong learning;
- Development of alumni associations;
- Consider streamlining national level management structures;
- Consider a shift of balance from project to sector and regional wide approaches;
- Set up program/project support so that it yields stronger lessons about what works best and why;
- –Use findings to inform future policy direction [Figure 7 and Tables 1-3].

REFERENCES

1. Lee JW, Lee H. Human capital in the long run. *J Dev Econ* 2016;122:147-69.
2. Behbahani a. Technical and vocational education and the structure of education system in Iran. *Procedia Soc Behav Sci* 2010;5:1071-5.
3. Colclough C. Education and the market: Which parts of the neoliberal solution are correct? *World Dev* 1996;24:589410.
4. Tabassi AA, Abu Bakar AH. Training, motivation, and performance: The case of human resource management in construction projects in Mashhad, Iran. *Int J Project Manag* 2009;27:471-80.
5. Technical and Vocational Training Organization in Iran; 2022. Available from: <https://www.english.irantvto.ir/index.aspx?pageid=2531> [Last accessed on 2022 Oct 02].
6. Maclean R, Wilson DN. (Editor-in-Chief). *International Handbook of Education for the Changing World of Work: Bridging Academic and Vocational Learning*. UNESCO-UNEVOC International Library of Technical and Vocational Education and Training. Published by Springer English. Vol. 6. Hardcover; 2009. Available from: <https://www.springer.com/978-1-4020-5280-4>
7. Atchoarena. D. Exploring Vocational Education Reforms. Vol. 22. International Institute for Educational Planning, Newsletter: Paris; 2004. p. 1.
8. Wikipedia; 2022. Iran Technical and Vocational Training Organization. Available from: https://www.en.wikipedia.org/wiki/iran_technical_and_vocational_training_organization [Last accessed on 2022 Oct 04].
9. Jam-E-Jam Newspaper. development Vocational Schools in Confronting to Unemployment in Iran. (Persian). No. 3552.WED; 2012. p. 1-17. Available from: <https://www.jamejamonline.ir>
10. Instructor Training Center (ITC) in Iran. Karaj City. (Persian); 2022. Available from: <https://www.tvto-itc.ir> [Last accessed on 2022 Oct 01].
11. UNESCO-ILO Report; 2022. Available from: <https://www.ilo.org> [Last accessed on 2022 Oct 02].
12. O'Hanlon-Rose T. a different approach to secondary vocational education. ACEL Conference Paper, Australian Technical College-North Brisbane; 2007. Available from: <https://www.springer.com>
13. Bulgarelli A, Lettmayr C, Kreiml P. Accreditation and Quality Assurance in Vocational Education and Training. Selected European Approaches. Luxembourg: Publications Office of the European Union. European Centre for the Development of Vocational Training. It can be Accessed through the Europa Server; 2009. Available from: <https://www.europa.eu>
14. Van Lieshout H. An Actor-centered Institutional Approach to Flexicurity: The Example of Vocational Education and Training. Flexicurity Centre for Applied Labour Market Research and Innovation. Groningen: Hanze University Groningen; 2008
15. Wilthagen, T. Managing social risks with transitional labour markets. In: Mosley H, Reilly JO, Schömann K, editors. *Labour Markets, Gender and Institutional Change. Essays in Honour of Guenther Schmid*. Cheltenham: Edward Elgar; 2002. p. 264-89.