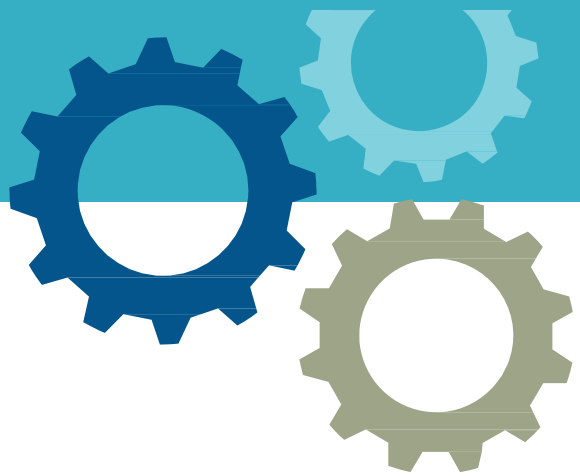
TURKISH MINISTRY OF
NATIONAL EDUCATION

Series of Education Analysis and Assessment Reports No: 1 • November 2018

Outlook of Vocational and Technical Education in Turkey



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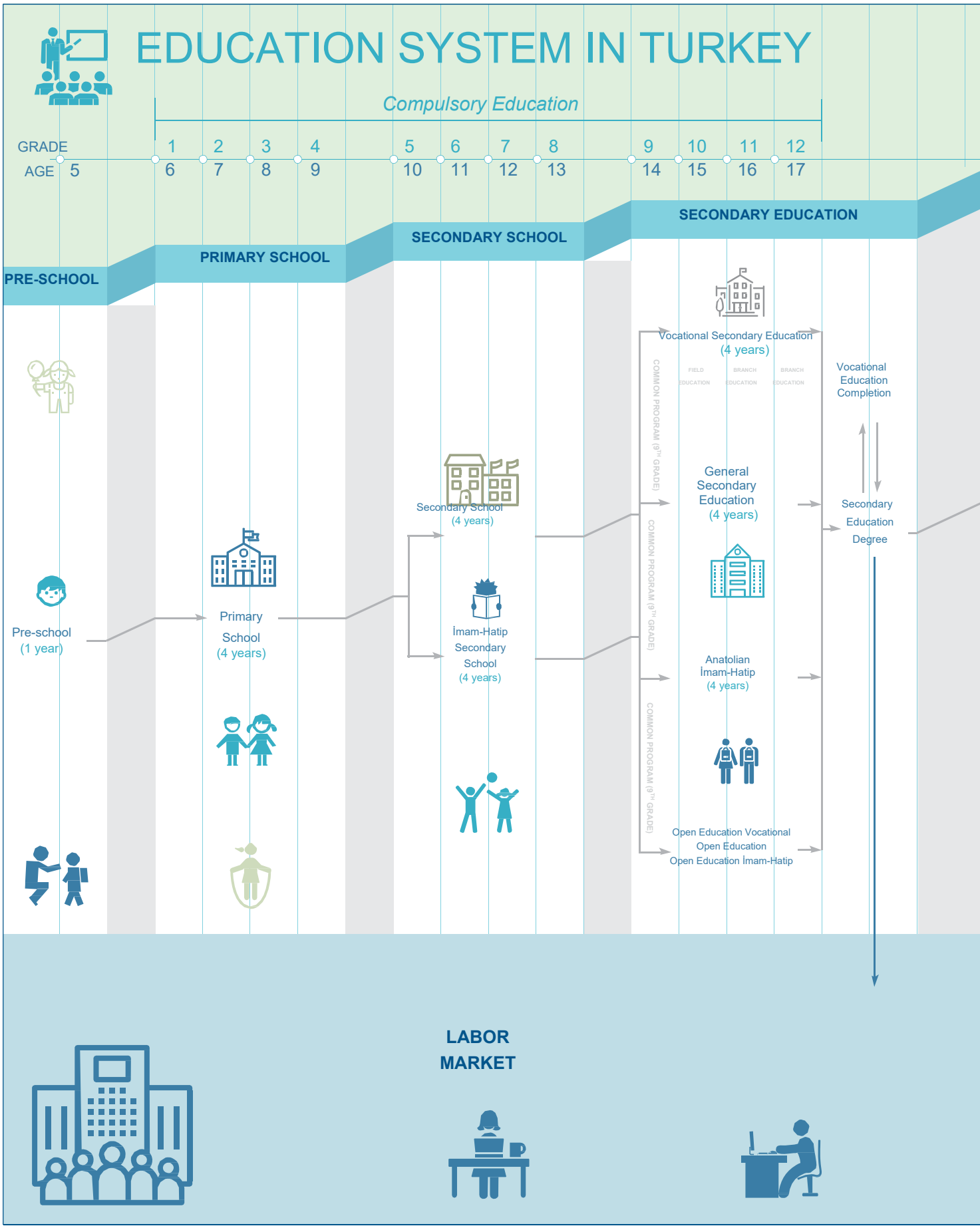
EDUCATION SYSTEM IN TURKEY
Compulsory Education
GRADE
AGE
1 2 3 4 5 6 7 8 9 10 11 12
5 6 7 8 9 10 11 12 13 14 15 16 17
PRE-SCHOOL
PRIMARY SCHOOL
SECONDARY SCHOOL
SECONDARY EDUCATION
Pre-school
(1 year)
Primary
School
(4 years)
Secondary School
(4 years)
İmam-Hatip
Secondary
School
(4 years)
Vocational Secondary Education
(4 years)
FIELD EDUCATION
BRANCH EDUCATION
BRANCH EDUCATION
COMMON PROGRAM (9TH GRADE)
COMMON PROGRAM (9TH GRADE)
COMMON PROGRAM (9TH GRADE)
General
Secondary
Education
(4 years)
Anatolian
İmam-Hatip
(4 years)
Open Education Vocational
Open Education
Open Education İmam-Hatip
Vocational
Education
Completion
Secondary
Education
Degree
LABOR
MARKET

HIGHER EDUCATION

Higher Education
(undergraduate)
(4-6 years)

Higher Education
(graduate)

Higher Education
(Vocational College)
(2 years)

LABOR MARKET

Turkish Ministry of National Education

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Contents

Contents

Tables

Figures

Abbreviations and Acronyms

AA	Anatolian News Agency
EU	European Union
ACUT	Advisory Committee for Vocational Training
AVP	Anatolian Vocational Programs
ARED	Sign Association of Turkey
R&D	Research and Development
ASFED	Elevator Industrialists Federation
Inc.	Incorporated Company
ATP	Anatolian Technical Programs
BAĞKUR	Social Insurance Institution for Tradesmen and Craftsmen and Other Self-Employed
BHS	Vocational High Schools (*Berufsbildende Höhere Schuler*)
BMS	Vocational Secondary Schools (*Berufsbildende Mittlere Schuler*)
MPAHS	Multi-Program Anatolian High School
DGVET	General Directorates for Vocational Education and Training
SPO	State Planning Organization
EAfA	European Alliance for Apprenticeships
EPDK	Energy Market Regulatory Board
EQAVET	European Quality Assurance in Vocational Education and Training
ERG	Education Reform Initiative
ETF	European Training Foundation
EUROPASS	European Skills Passport
GEF	Global Environment Fund
SUTP	Syrians Under Temporary Protection
Hak-İş	Hak-Is Trade Union Confederation
LSTP	Lifelong Skills Training Project
DGLLL	General Directorate for Life-Long Learning
ILO	International Labour Organization
SEPSEI	Scholarship Exam for Primary and Secondary Education Institutions
İŞKUR	Turkish Employment Agency
İTO	İzmir Chamber of Commerce
JICA	Japan International Cooperation Agency
PSG	Project for Schooling of Girls
KfW	German Development Bank
SEE	State Economic Enterprise
KOSGEB	Turkish Small And Medium Enterprises Development Organization

Abbreviations and Acronyms

MAKTEK	Machine Technologies Club
VOHS	Vocational and Open High Schools
MoNE	Ministry of National Education
SVTE	Strengthening Vocational and Technical Education
MEİS	National Education Statistics Module
VECP	Vocational Education Center Programming
MESGEP	Improving the Vocational Skills Project
MESS	Turkish Employers Association of Metal Industries
MKEK	Mechanical and Chemical Industry Company
MTAL	Vocational and Technical Anatolian High School
MTE	Machinery-Tools Industry
VTEGD	Vocational and Technical Education General Directorate
MTEK	Vocational-Technical Education
MÜSİAD	Independent Industrialists' and Businessmen's Association
MYK	Vocational Qualifications Authority
NOSS	National Occupational Skills Standard
OECD	Organisation for Economic Co-operation and Development
OIZ	Organized Industrial Zone
PLATFORMDER	Association for Operators of Personnel Lifting and Conveying
RTÜK	Radio and Television Supreme Council
CP	Cerebral Palsy
SEKA	General Directorate of Cellulose Paper Factories
SERÇEV	Association for Children with Cerebral Palsy
SGK	Social Security Institution
SSK	Social Insurance Institution
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
STEM	Science, Technology, Engineering, Mathematics
NGO	Non-Governmental Organization
RoT	Republic of Turkey
TAFE	Technical and Further Education Institution
TAŞPAKON	Confederation of All Cooks and Pastry
TCDD	Turkish State Railways
TED	Turkish Education Association
THK	Turkish Aeronautical Association
TİAD	Machine Tools Industrialists and Businessmen Association

Abbreviations and Acronyms

TİGEM	General Directorate of Agricultural Enterprises
TİKA	Turkish Cooperation and Coordination Agency
TİSK	Turkish Confederation of Employer Associations
TKİ	Turkish Coal Enterprise
TMEK	Turkish Vocational Education Board
TREDAŞ	Thracian Electricity Distribution Inc.
TTKB	Board of Education and Discipline
TÜBITAK	Scientific and Technological Research Council of Turkey
TÜİK	Turkish Statistical Institute
TÜRSAB	Turkish Travel Agencies Association
SVTC	Specialized Vocational Training Centers
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
NQS	National Qualification System
Vetexpress	Vocational Education and Training Mobility Database and Guidelines Project
YÖK	Council of Higher Education

Preface

Education is a process constantly changing and evolving according to the age and renewed in the light of knowledge and experiences. The main objective is to educate individuals who are equipped with the skills and competencies required by the information society, internalizing the universal values of national culture and humanity.

Although the impact of dizzying developments in information and communication technologies is felt in all sectors and in every area of life, education is the most affected area. Different types of education also have different effects on economic development. For instance, general education constitutes an infrastructure in the early stages of development, but vocational and technical education is more prominent in societies that starting industrialization.

In this context, the importance of vocational and technical education systems is increasing in parallel with the rapidly changing information, technology, production methods and developments in business life.

Turkey is experiencing both the rapid change in the world and its own change contemporaneously and deeply. This is of course the case for every country; however, when we look at the history of our Republic, we can easily say that we live one of the main break periods. Investments have been accelerated and production has been diversified in Turkey due to capacity building, legal arrangements, money management, democratic initiatives, and similar reasons. But on the other hand only an average of 3.5% of the production consists of products based on high technology, but 40% of the production in the manufacturing industry is at low technological level and the rest is at technological levels below and above the middle. It is unlikely to get out of the middle income trap that we have been in since the 1970s without technology intensive production. The way out is to develop policies that communicate with each other in economics and education, and achieve a real structural transformation in science, technology and education based on a social consensus.

It is our basic duty to make efforts to ensure that our country's young population gain the necessary knowledge, skills and competence by structuring the vocational and technical education in accordance with the expectations of the local, national and international labor markets to ensure the sustainable economic and social development of our country, make it globally competitive, and meet its need for qualified workforce.

In line with our national education policy renewed with our 2023 educational vision, we are working to improve the quality of vocational education so as to raise the qualified workforce in the occupations and fields required by the business world and to ensure that the education-employment-production link is carried out on a sound basis.

In order to achieve this goal, we want to establish an efficient and effective institutional structure, and further improve the management and organization of our vocational education system through human, financial, physical and technological infrastructure.

In the context of efforts, this report "Outlook of Vocational and Technical Education in Turkey" has been developed with the contribution from the Vocational and Technical Education General Directorate and the Advisory Committee created within the Ministry.

This report Outlook of Vocational and Technical Education in Turkey elaborates the historical development of vocational and technical education in Turkey and the current Turkish Vocational and Technical Secondary Education System according to programs and occupational fields. The vocational education models applied in pioneer countries in vocational education are analyzed, and OECD emphasizes the points where successful vocational education systems and vocational education practices in our country intersect.

Analyzes are made within the framework of the vocational education reports prepared by non-governmental organizations and researchers, and some examples are presented from the press about vocational education. The changes in the education indicators of our vocational secondary education system over the years are reviewed.

In the final section, a status analysis on our vocational and technical education system, prioritized problematic areas, and improvable areas are evaluated, and our actions that will take place in line with our goals given in 2023 Educational Vision of the Ministry are set forth.

This paper will be first report of the Ministry of National Education contemplating the vocational and technical education in Turkey from a broad perspective. This report is the first publication of the Series of Education Analysis and Assessment Reports of the Ministry.

I expect that this report will shed light on the main problem areas by evaluating the developments in vocational and technical education at the secondary level in Turkey, encourage research into different aspects of the subject, and be thereby an important step of the solution provision process; I hope you will find our work useful and I thank those who contributed.

Ziya Selçuk
Minister of National Education

1 Introduction and Historical Background

Vocational education, which emerged by addressing the provision of students with skills related to jobs and occupations as an educational issue, started to be accepted as a professional education and training field especially in the 18th century and beyond (Aytaç, 2006). The "Occupational School" and the "Production School", established to provide vocational and technical education, aims to provide students with vocational skills and competences in certain subjects. Vocational and technical education plays today an important role in meeting the human resource needs for occupations and achieving a balance between graduates and employment areas (Bolat, 2016).

The participation of students provided with vocational education in the global economy and their inclusion in the production process is perceived as the most effective solution for ensuring the balance of employment and for the rapid supply of the human resources required for the industry (Eichhorst, Rodriguez-Planas, Schmidl and Zimmermann, 2015; Lerman, 2013). Youth unemployment rates are increasing especially in developing countries due to the fact that the human resources required by the rapidly growing industries and the expectations of the individuals having bachelor's degree do not match (Almeida, Behrman, & Robalino, 2012).

Vocational and technical education is one of the important steps taken in the field of education against this incompatibility with its structure which can be shaped according to the expectations of the industry and its practice base.

When examined the place of vocational and technical education in the history of Turkish education, it is seen that vocational and technical education has been carried out in different ways from the 12th century until today.

Vocational and technical education in the pre-republic period was carried out by artisans and craftsmen organizations by traditional methods from the 12th to the end of the 18th century. The organization of artisans and craftsmen, "Ahis", in the Seljuk period continued for a while in the Ottoman period as well and the transformed into "Guild" and "Gedik" organizations. The "Ahi" organization is defined as a structure that "includes handicraftsman, masters, journeymen, and apprentices and aiming at not only their solidarity, but also making them work honestly and carefully and also their education (Kılınç, 2016). In these organizations, trainings were carried out on the job and presented as an effective solution to the human resources needs of the time.

The first modern attempts in the field of vocational and technical education were initiated in the 18th century in order to organize the army. Vocational education is carried out in vocational and trade schools which are considered as formal education institutions since 1860s. Students, who mostly were orphans, were provided with training to exercise traditional occupations, such as shoe-making and tailoring, in correction houses launched in Niš in 1861 and Ruse and Sofia in 1864 (Bolat, 2016). In 1879, industrial schools for girls were opened in Istanbul in order to ensure that female students were not disadvantaged in vocational and technical education (Tuna, 1973).

One of the first attempts in the period after the Turkish War of Independence was to take steps to stimulate the economy. The need for education to play a role in the development of the national economy was also considered, and John Dewey, Alfred Kühne, and Omer Buyse, the educational philosophers of the time, were invited to Turkey. In the reports presented after the review, the need to raise labor force through education for the development of the national economy were mentioned, and it was recommended to launch programs in secondary and higher education for raising this labor force (Sezgin, 1983).

Vocational and technical education was included in the duty and service area of the Ministry of National Education in 1927, and governed by the General Directorate of Vocational and Technical Training established in 1933 within the Ministry. The Inter-ministerial Council, which was convened in 1934, proposed in line with the reports submitted by foreign experts that recommended meeting the need for qualified staff with apprentices' schools, evening art schools and short-term courses (Akkutay, 1991). The *Development Plan for Vocational Education*, which was prepared between 1934 and 1936, is important for the planning of vocational education and for the joint work of education and employment sectors. The plan is a joint product of the Ministry of National Education, Ministry of National Defense, Ministry of Agriculture, Ministry of Public Works, and the Ministry of Economy. It was envisaged in the plan that apprentices' schools, trade and secondary trade schools, evening trade schools, techies' schools, engineers' schools, and mobile village courses would be opened. The actions envisaged within the scope of the plan was implemented rapidly and the number of students, teachers and schools had increased rapidly (Demir and Şen, 2009). In 1941, the Undersecretariat for Vocational and Technical Education was established instead of the General Directorate of Vocational and Technical Education.

Ahi Organizations, Gediks and Guilds

During the Ottoman Era, vocational training was taught in the shops of various trade masters in the 18th century. In these shops where the trade education first began, apprentices could have had the ability to perform their own professions as a journeyman and then as a master after learning the profession (Özalp, 1961:17). Artisans and craftsmen of these shops, an education establishment, founded in the 13th century the Ahi organization for cooperation and protection purposes. "Ahi", which is an Arabic word, means "my brother". Nevertheless, J. Deny, a French Turcologist, investigated whether the word "ahi" was coming from other origins, and revealed that it "had emerged" from the word "akı" which meant bravery, hospitality, generosity (Çağatay, 1989: 43-44). Ahi organizations, which have a great importance in economic and economic fields, were brought to the Ottoman by Kara-Khanid Khanate in the 10th century (Turan, 1992:25). Ahi Evren, thanks to his tanner (leather) shop in Kayseri, has made the Ahi Brotherhood widespread among artisans and craftsmen around the shop. Regulating the economic life, the Ahi Brotherhood played a significant role by providing individuals with occupations and improving their economic conditions, and developed over time in many cities and villages of Anatolia (Gündüz, Kaya and Aydemir, 2012: 39; Akgündüz, 2014: 11-12). Every futuwwa code with the rules of such a structure served as a regulation for the members containing the purpose, fundamentals, establishment, principles, characteristics, and conditions of the futuwwa (Ülgener, 1981: 89).

Education in Ahis was in the form of practical training. In Ahi organizations, instructors called Ahi or Pir gave lectures to newcomers on a wide variety of subjects, including but not limited to literacy, hygiene, and good manners, in addition to subtleties of their profession (Akyüz, 1985:48-49). Taking courses in zawiyas, the educational areas of the era, apprentices were taught futuwwa code (regulation), Kur'an, Dance, folk songs and music, History and biographies, Sufism, Turkish language, Persian, Arabic and Literature (Aslıer, 1961:126). A master's reference was needed to go to these zawiyas of the Ahi system, which gave great importance to on-the-job training (Şahin, 1986:109-110). Transforming into gediks in 1727, Ahi organizations continued to give direction to the social and commercial life of the country for many years. (Hamitoğulları, 1986:136) Gediks begin to be seen in the Ottoman Empire from the eighteenth century. The name Gedik was used for the privileges given to artisans. The gediks in the Ottoman Empire were very important in terms of protecting the legal rights of artisans and contributing to their economic development. (Koyuncu, 2018:48).

With the necessity of organizing non-Muslim artisans due the fact that only Muslim artisans and craftsmen were allowed to enroll in Ahi organizations, guild organizations started to be established. The word Lonca in Turkish which means Guild was derived from the Italian Loggiya and French word Loge (Özdemir, 1986:160). The word Guild is used as a technical term for the location where raw material distribution takes place. The guild, which originally meant the distribution location of raw materials, was later used to refer to places where the artisans' unions were held, and then became the name of the organization (Güllülü, 1977:125). The strict management of guilds, the establishment purpose of which was the protection of the rights of merchants and craftsmen, contributed to production increase and economy. (Turan, 1992:31) In a Guild, having various ethic codes such as loyalty to the profession and, commitment to traditions and customs, those who do not comply with the decisions of the Guild board could face severe penalties such as fines, withdrawal from the guild, and ostracization from craft. A person ostracized from craft cannot work anywhere (Gürata, 1975: 97-98).

In 1960, the Undersecretariat for Vocational and Technical Education was reorganized into General Directorate for Boys' Technical Education, General Directorate for Girls' Technical Education, and General Directorate for Commerce Education. Apprenticeship training was included in the vocational education system with the Law No. 2089 passed in 1977. Basic vocational education was reorganized in a system integrity including "formal", "apprenticeship", and "non-formal education" with the Vocational Education Law No. 3308 passed in 1986.

Furthermore, social partners were given important roles in the planning, implementation and evaluation of formal, apprenticeship and non-formal vocational education with Law No. 3308. In this regard, the national-level Vocational Education Council within the MoNE and Provincial Vocational Education Councils were established (Akpınar, 2004).

Mehmet Rüştü Uzel

Mehmet Rüştü Uzel who has great contribution to the development of vocational and technical education in Turkey was born in Bursa in 1891. Having successful school life, Rüştü Uzel's interest in technical issues during high school education increased and manufactured parts requiring dexterity. He began to conduct systematic studies in technical education in those years. Although he got into the faculty of medicine, he did not study there and went to France with a scholarship. He enrolled Klerman-Ferrand University in France and he studied general chemistry, industrial chemistry, and agricultural chemistry. After completing his education in 1913, Mr. Uzel returned to Turkey and started working as a teacher of physics in Kastamonu High School. After his military service, he worked as the technical manager of a factory in Adapazarı. In 1918, he worked as a chemistry teacher in Istanbul Teachers' School and at the same time he taught chemistry at Galatasaray High School and Higher Teacher Education School. In 1927, Mr. Uzel was appointed as the Istanbul Female Teachers' School principal and shortly after, in the same year, was appointed to the Directorate of Higher Education of the Ministry of National Education. In this position, Rüştü Uzel also served as the General Director of Vocational Education and Training and a member of the Board of Education and Discipline at the same time. In 1933, the Directorate General of Vocational and Technical Education of the Ministry of National Education was established and Mehmet Rüştü Uzel was appointed as General Manager (Turan, 1992:58).

According to Rüştü Uzel, a knowledge learned theoretically should also be practiced in workshops. (Irmak, 1965:36). Attaching great importance to foreign language learning, Mr. Uzel argued that any materials produced in schools should be offered for sale as domestic products. He had an expert, invited from Paris for this purpose, set up workshops (Tüzün, 1965:8-9).

Adopting the principle of education for production and training in production, Rüştü Uzel preferred more practice instead of too much theoretical knowledge (Dinçel, 1984:10). His never-changing principle was that the work done would always be beneficial. According to Rüştü Uzel, schools and industrial schools should work in a joint program in order to increase production in accordance with the requirements of modern industry and to raise workforce meeting the relevant needs as well. He stresses on importance of this for the number of qualified personnel to be raised and for employment. Rüştü Uzel aspired to dissemination of all kinds of vocational and technical schools, including but not limited to boys' technical schools, girls' technical schools, and commerce schools, all over the country (Turan, 1992:79). Mr. Uzel, who conducted important works both in Turkey and abroad for the development of vocational technical education, issued a professional technical educational journal within the ministry and published the opinions of the experts in this journal.

Mehmet Rüştü Uzel founded the following: Girls' Evening Trade School and Boys' Evening Trade School in 1928; Secondary Tailoring School in 1929; Construction Institute and Construction secondary School and Commerce High School in 1933; Female Technical Teachers' School in 1934; Male Technical Teachers' School in 1931; Academy of Economics and Commercial Sciences in 1938; Evening Tailoring Schools and Mobile Trade Courses in 1939; Trade Secondary School in 1942; Special Classes in Institutes, Evening Techies' School, and Preparatory Classes of the Men's Trade Institute in 1943; Mining Technicians' School in 1944; Journeymen's School in 1946; Ankara Chemical Trades Institute in 1947, and Zonguldak Mining technical School in 1949 (Turan, 1992:59-60).

Law no. 3797 on the Organization and Duties of the Ministry of National Education published in 1992, the following institutions were structured: General Directorate for Boys' Technical Education; General Directorate for Girls' Technical Education; General Directorate for Commerce and Tourism Education; Department of Health Affairs; Apprenticeship, Vocational and Technical Education Development and Dissemination Department; and Education Research and Development Department.

The six units responsible for conducting vocational and technical education at the Ministry of National Education have been merged under the Vocational and Technical Education General Directorate (VTEGD) pursuant to Decree Law no. 652 on Organization and Duties of Ministry of National Education published in 2011. Moreover, non-formal vocational education and open education institutions have been gathered under the General Directorate for Life-Long Learning (DGLLL).

Industrial Revolution

18. In the 18th century, the use of steam engines, newly produced machines and various inventions led to the realization of the industrial revolution. Before the Industrial Revolution, production was made with simple tools manufactured in houses or small workshops (Günay, 2002: 8-14). The Industrial Revolution, which began in England in 1760 with the invention of steam engine, forms the basis of modern industry (Ünal, 2010: 6). In the early years of the industrial revolution, the invention of the steam engine had rapidly developed the cotton weaving industry, especially in England. The rapid increase in industrialization had also affected urbanization and social life. All these developments in England influenced America and then the whole world, especially Europe.

In the middle of the 19th century, the channel transport network and railway networks were developed. Again in this period, new forms of trade emerged, settlements close to these resources have started to benefit from energy and mineral resources (Ünal, 2010: 6). The developments in technology in this period, especially after then the electric motor and after the invention of communication devices such as light bulb, telephone and telegraph, the economic system in the world has also changed due to these technological developments. This period is called the Second Industrial Revolution. And another industrial movement have started by the development of computer and electronic technologies following the development of nuclear energy and electronic industry. And this period is called the third industrial revolution (Günay, 2002:8-14). With the development of technology and the emergence of computers, industry and production have moved to another dimension and various machines have been started to be invented to support production.

Industrial revolutions and technological developments that influence the whole world have had an impact on Turkey as well; industrialization has accelerated after the declaration of the Republic in particular.

Development of Industry in Turkey

Before the first industrial revolution, between 1300 and 1700, the Ottoman Empire was one of the most developed countries in the world. The invention of steam engines with the industrial revolution prevented the traditional domestic production of the Ottoman Empire, which adversely affected both the industry and the country's economy (Ünal, 2010:11). During the early Ottoman period, the production was carried out with Ahi organizations and then gediks and guilds. Especially the guilds were very important for the country. The guilds both supported production and provided a substantial amount of tax revenues on a regular basis (Ünal, 2010:13).

Industrialization activities in Turkey has gained momentum with the establishment of facilities such as shipyards and foundries along with the proclamation of the Edict of Gülhane in 1839. But, the first industrial revolution occurred with the launch of the textile industry in Europe affected adversely the production facilities in Turkey based on manpower.

In addition, The capitulations signed with European states in the 16th century led to an increase in customs duties, and most production facilities were shut down since there was no competition to imported products (Ertin, 1998:165-167).

After 1870, the Ottoman government continued to invest in the manufacturing industry and to grant licenses and concessions to entrepreneurs. The Government conducted audits on the entrepreneurs supported (Ünal, 2010:17-18). After 1870, the number of factories started to increase and sugar, cigarette and paper mills started production with imported raw materials. After 1880, the number of factories in the Ottoman Empire increased at a great pace; and accordingly, foreign capital increased. In this period, 8% and 11% of the factories operated for the state and the incorporated company; and %81 by private companies (Ökçün, 1997:5).

In the second half of the 19th century, the state and private entrepreneurs, mainly in Istanbul and Izmir, started to establish factories covering different production lines (Sevgi, 1994: 25). After the declaration of the Second Constitutional Monarchy, was enacted the Industrial Promotion Law in order to establish in the Ottoman Empire large-scale industrial enterprises that could compete with Europe between 1910 and 1913 (Ünal, 2010:21). 53.5% and 54.9% of the Ottoman industry was in Istanbul in 1913 and 1915, respectively; and 22.3% and 22% in Izmir in 1913 and 1915, respectively (Ünal, 2010:21).

In 1915, 81% and 10.6% of the industrial establishments were belonged to private persons and incorporated companies, respectively; whereas the remaining 8.3% belonged to the Ottoman Empire and the Imperial Treasury (Devlet Planlama Teşkilatı, 1967:15). By the 1920s, administrators who realized that economic independence was as important as political independence attached great importance to industrialization and developed policies accordingly (Ünal, 2010:21).

Researchers separates Turkey's industrialization process into four periods: the First Liberal Period, the Statist Industrialization Period, the Second Liberal Period, and the Planned Period (Ünal, 2010:37).

In the First Liberal Period, İzmir Economic Congress was convened arrangements were made such as regulations of customs duties, Industrial Promotion Law, development of nation-wide road systems and transportation means, opening of industrial vocational schools and industrial apprenticeship schools, establishment of engineering faculties, opening of industrial high schools, and opening of apprenticeship schools (Doğanay, 1998: 399- 400). It was decided with the İzmir Economic Congress to establish İş Bank, Sanayi-Maadin Bank, and the Central Bank, pass the Industrial Promotion Law, and prepare the First Five-Year Industrial Development Plan (Sevgi, 1194: 40). In this direction, Etibank was founded in 1933 and under the leadership of Etibank; investments were made in iron industry, chemical industry, cotton weaving, paper and cellulose, kamgan industry, hemp industry, sulfur and earth industry. As a result of investments and incentives, about 65,000 businesses were found in the industrial census conducted in 1927 in Turkey.

43.5% and 23.8% of these businesses were agriculture and weaving, respectively, whereas 22.6% was mining, machinery and repair. Karabük Iron and Steel Works, which is the first iron and steel factory of Turkey, was established in 1937. In the industrial census conducted in 1950, 23 years after the first industrial census, the number of enterprises was determined as approximately 84,000 (Ertin, 1998:165-167).

The following were achieved in the Statist Industrialization Period: the Law on Protection of Turkish Currency; Turkish Central Bank Law; some restrictions on imports; law on the administration of tea, sugar and coffee imports, and the establishment of Sümerbank (Tokgöz, 2002: 25-26). During this period on 6 July 1935 in Turkish Sugar Factories Inc. was established (Kepenek, 1983: 25). Following the First Five-Year Industrial Development Plan, the Second Five-Year Industrial Plan was implemented on January 24, 1936. In this period, investments were made in the following: mining, electrification, coal and fuel, ceramic, food, chemistry, machinery, and marine transportation vehicle (İnan, 1972: 16-17).

The statist industrialization weakened and liberal practices replaced it in the Second Liberal Period (Kepenek, 1983: 27-28). In this period, a development strategy based on the free market economy and the private sector's initiative power was implemented, and the priority of state investments was given to agriculture, not to industry, and the Law on Encouraging Foreign Capital was enacted. The private sector gained dynamism in this period with the policies implemented and most of the large holdings were established in this period. The quality and quantity of consumer goods increased with the contribution of private enterprises to domestic production (Ünal, 2010: 52-53). Private industry had begun to develop rapidly with the establishment of Turkish Industrial Development Bank in 1950 (Ünal, 2010: 54). Furthermore, the following has made a significant contribution to industrial development: Mechanical and Chemical Industry Company (MKEK) established in 1950; Fertilizer, Flesh, and Fish Agency established in 1952; Turkish Cement-Nitrogen established in 1953; Turkish Petroleum Corporation and State Supply Office established in 1954; SEKA and Turkish Iron-Steel Works established in 1955; and TKİ established in 1957 (Ertin,1998:165-167).

In the Planned Investments Period, a development strategy focusing on industrialization was adopted, and First Five-Year Development Plan was introduced. In the first years of this period, 3.1% of the industrial sector was mining, 94.4% was manufacturing and 2.5% was energy (Türk, 1974:673).
In the First Five-Year Development Plan, industrialization was prioritized; industry and agriculture were based on a balanced development (Devlet Planlama Teşkilatı, 1963: 39).

In the Second Five-Year Development Plan, not only quantitative, but also qualitative growth of the industry was targeted with a concrete approach describing industrialization identical to economic development (Kepenek, 1983: 147-148). In the Third Five-Year Development Plan, the basic structure of the economy was aimed to be changed by focusing on meeting the needs of the heavy industry and defense industry, establishing large industrial enterprises, and the production of investment goods (Kepenek, 1974: 39).

In the Fourth Five-Year Development Plan, it is aimed to maintain the domestic production policy in the industrial production and to carry out the structural change and transformation in the industry in order to achieve rapid growth (Kepenek, 1983: 153).

The introduction of foreign products into the domestic market after 1980, government's support to private industry, transfer of SEEs to the private sector, establishment of enterprises with build-operate-transfer model, and establishment of small industrial sites in provinces and districts encouraged private sector production, and the contribution of industry to national income increased to 35% (Ertin,1998:165-167).

In the Fifth Five-Year Development Plan (1985-1989), the importance of development is emphasized and the aim of rapid economic development was set. The priority in this period was the import and export policies. When the capital entering the country began to increase, the foreign capital incentive law was revised. Petroleum and natural gas exploration was accelerated to use both in industry and to provide energy supply to industrial production (Devlet Planlama Teşkilatı, 1985: 43).

In the Sixth Five-Year Development Plan (1990-1994), it was aimed primarily to balance income distribution by reducing unemployment, to reduce inter-regional development differences, and to achieve a balanced and rapid development (Ünal, 2010:78). In this context, it was aimed that the contribution of industry to the economy would be at the most suitable level by utilizing private enterprises. In this period, industry was regarded as the basis of development, and it was aimed that the industry would provide foreign exchange inflow to the country and to compete in the foreign market (Sevgi, 1994:81).

In the Seventh Five-Year Development Plan (1996-2000), as in the previous objective, increasing the competitiveness in industry came into prominence. Another important objective of this period is emphasize that importance should be attached to vocational education in order to obtain the labor force needed in industry (Devlet Planlama Teşkilatı, 1996: 56).

In the Eighth Five-Year Development Plan (2000-2005), investments for industrial production by appropriate technology, high added value, operations generating foreign currency, employment growth, elimination of inter-regional development differences, and competition in foreign markets were supported (Ünal, 2010: 89).

In the Ninth Five-Year Development Plan (2007-until now), significant breakthroughs were achieved in industrial investments, production and exports. The following have become important in particular: international competition, technological developments, training of qualified personnel, establishment of organized industrial zones, and development of R&D and information technologies (Devlet Planlama Teşkilatı, 2007: 52).

2

Vocational and Technical Secondary Education System in Turkey

2.1 Purpose of Vocational and Technical Education

Vocational and technical education, in cooperation with social and economic sectors, aims to raise qualified labor with national and international vocational competence and professional ethics and professional values, composed of innovative, entrepreneurial, and productive individuals contributing to the economy. It is aimed with vocational and technical education to establish a vocational and technical education system, which is offering appropriate learning opportunities in accordance with the interests, abilities and temperaments of individuals, focusing on professional and work ethics, innovative, preparing individuals for employment, and being improved according to the needs of economic and social sectors and renewed continuously in cooperation with stakeholders.

Education enables economic growth through income growth in the national economy, more equitable income distribution, and acceleration of the economic development of society Vocational and technical education has the potential to enable the social and economic development of the country, since due to its direct impact on individual and social aspects of the economy. Amoor (2011) stated that the main purpose of vocational and technical education is to harmonize the expectations of the country and the individual in terms of employment. Vocational and technical education aims to prepare students for higher education and work life by imposing a common general culture in accordance with their interests and abilities in a flexible structure as well as educating students as good citizens.

Providing individuals with knowledge, skills, attitudes, and professional ethics required by the profession in line with their interests, abilities, and temperament is extremely strategic in vocational and technical education which plays an important role in economic and social development of nations. In vocational and technical education, it is aimed to establish a structure that can meet the labor force needs of the sector and adapt to the developing technology, where stakeholders participate actively in planning and decision-making processes.

In order to create a system compatible with the 2023 targets, it is planned to establish an integrated structure aiming to change the existing social perception for vocational and technical education, and identifying students' professional interests and abilities and directing children and their families accordingly, where the academic intensity of courses is reduced, the contents of vocational courses are updated, on-the-job training opportunities for teachers are enhanced, the infrastructure and equipment of schools are aligned with rapidly changing and evolving technology through the use of national and international sectors and public financial resources, different wage policies prioritizing graduates in employment are implemented, the sector is more involved in vocational and technical education processes, cooperation with sector leaders is strengthened, national and international sectoral cooperation protocols and projects that could function as best practice models are implemented, and transition of graduates to higher education is enabled.

2.2 Priorities of Vocational and Technical Education

- Raise **qualified labor** in line with the requirements,
- Manage vocational and technical education with a **participatory approach**,
- Ensure that graduates are **trained to participate in production**,
- Continuously **improve** the vocational and technical education system and **raise its quality**,
- **Prepare modular teaching programs** in line with the requirements of the labor market,
- Ensure **social and sectoral integration of education** in order to increase efficiency and competitiveness in the economy,
- Provide individuals with necessary knowledge and skills required by a profession as well as **competences for adapting to change**,

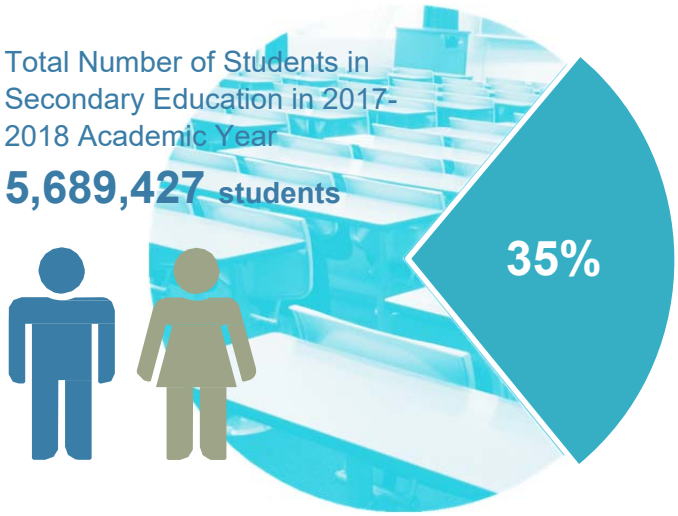
- Provide individuals with basic competences as well as **high-level skills** on information and communication technologies in specific areas along with the digitalization process,
- Educate students with an **Ahi approach**, which is the basis of our national culture, and with the relevant work ethics,
- Take an active part in the **achievement of human-oriented development** by means of vocational and technical education

Vocational and technical education must be accessible all who need, provide individuals with competencies appropriate to the conditions of the age in line with their interests and abilities, support individuals' entrepreneurship, teamwork, decision making, problem solving, ensure national and international recognition and mobility, and train individuals in a dynamic structure that can adapt to changing social and economic conditions.

2.3 School Types and Programs

In vocational and technical education, formal and non-formal education is provided in order to enable the students to receive education in accordance with their possibilities. Vocational open education high schools have been established in order to meet the vocational training needs of individuals expelled from the process while in formal education wishing to acquire an alternative profession after compulsory education age (Sözer, 2017). Student admissions to vocational high schools may vary according to the type of school and the fields and branches to be selected. Student transitions among school types and programs and transfers among schools can be made under certain conditions.

Each student is provided with a degree according to type of school, program, field, and branch s/he completed. In 2017-2018 academic year, a total of 5,689,427 students received education in secondary education. 1,987,282 of these students are in vocational and technical secondary education. The formal education given within the scope of vocational and technical education is carried out in three types of schools: Vocational and Technical Anatolian High Schools, Multi-program Anatolian High Schools, and Vocational Education Centers. Vocational and technical education within the scope of non-formal education is given in Vocational Open Education High Schools. Educational processes vary according to school types.



Source: 2017-2018 National Education Statistics
* Students of the following are included in the number of students: Vocational High Schools affiliated with VTEGD, General Directorate for Special Education and Guidance Services, and Other Ministries and Institutions, Schools affiliated with General Directorate for Private Education, and Open Education High Schools.

2.3.1 Formal Vocational and Technical Education Schools

Vocational and Technical Anatolian High School

- Anatolian Vocational Program (AVP)
- Anatolian Technical Program (ATP)
- Mastery Program (VECP)

Multi-Program Anatolian High School

- Vocational and Technical Anatolian High School
- Anatolian High School
- Anatolian İmam-Hatip High School
- Mastery Program (VECP)

Vocational Education Centers

- Mastery Program (VECP)

Fine Arts High Schools

Sports High Schools

Programs in **54 fields** and **199 branches** under these fields are being implemented in Vocational and Technical Anatolian High Schools.

Programs in **27 fields** and **142 branches** under these fields are being implemented in **Vocational Education Centers**.

- **Anatolian Vocational Program** includes general knowledge courses as well as knowledge and skills related to a profession.
- **Anatolian Technical Program** includes mathematics, physics, chemistry and biology courses taught intensively in 4 years as well as knowledge and skills related to a profession.
- In both programs, professional field is taught in the 10th grade, and branch education is given in the 11th and 12th grade depending on the profession.
- Students are enrolled in **Anatolian Vocational Programs** by open admission and local placement.
- Students are enrolled in the **Anatolian Technical Program** through a central placement examination.
- **Multi-Program Anatolian High Schools** are secondary education institutions that apply general and vocational and technical education programs under a single administration.
- **Vocational Education Centers** are the educational institutions where journeyman and mastership training and vocational and technical course programs are applied.
- Students are enrolled in **vocational education programs** by open admission and local placement.
- Students in **vocational education programs** select their fields and branches as from the 9th grade. A suitable workplace for the branch and a master instructor is required to start training. One or two days of theoretical training, four or five days of vocational training is provided in the workplace.
- Programs in 54 fields and 199 branches under these fields are being implemented in Vocational and **Technical Anatolian High Schools**.
- Programs in 27 fields and 142 branches under these fields are being implemented in **Vocational Education Centers**.

Vocational Education Centers

Students are enrolled in Vocational Education Centers for journeyman and mastership training.

Enrollment conditions for vocational education center programs:

a) Being a graduate of at least secondary school or imam-hatip secondary school.
b) Being eligible to do the work required by the profession in terms of personal nature and physical conditions.

A suitable workplace for the field and branch and a master instructor are required and the relevant entity should have concluded a Vocational Education Contract with the MoNE to start training.

Students of the vocational education center program are regarded as regular students and eligible to all student rights.

Vocational education centers (apprenticeship training) has been included in the scope of compulsory education in order to meet the apprentice needs of artisans and craftsmen who are the cornerstones of the economy and raise students by means of on-the-job training through a master-apprentice relationship originating from the Ahi culture. Any student, who completes a vocational training center program, will be eligible to higher education, if s/he passes the additional courses and get a degree.

Students attending vocational education center programs take a skills test at the end of every academic year from the 10th grade.

2.3.2 Non-Formal Vocational and Technical Education Schools

Vocational Open High Schools (VOHS)

The Vocational Open High School combined distance education technologies with face-to-face education in 1995 and provided services as a program under the Open Education High School until 02.02.2006. The "Vocational Open High School" was incorporated into the General Directorate for Education technologies upon the Ministry's approval 1461 dated 02.02.2006.

The program content of the Vocational Open High School is equivalent to program contents of the vocational high schools within the formal education system, but it differs from formal education in terms of structure and functioning.**Journeyman** skills test and **mastership** skills test is applied at the 11th and 12th grades, respectively.

Before employing an apprentice candidate or apprentice, the owner of the workplace has to conclude a **contract for vocational training in businesses** with him/her or his/her parent or guardian if s/he is a minor.

Fine Arts High Schools

Fine Arts High Schools are the institutions that provide four-year day and/or boarding education for the graduates of secondary schools or imam-hatip secondary schools. These schools are primarily opened in places where higher education institutions related to fine arts exist.

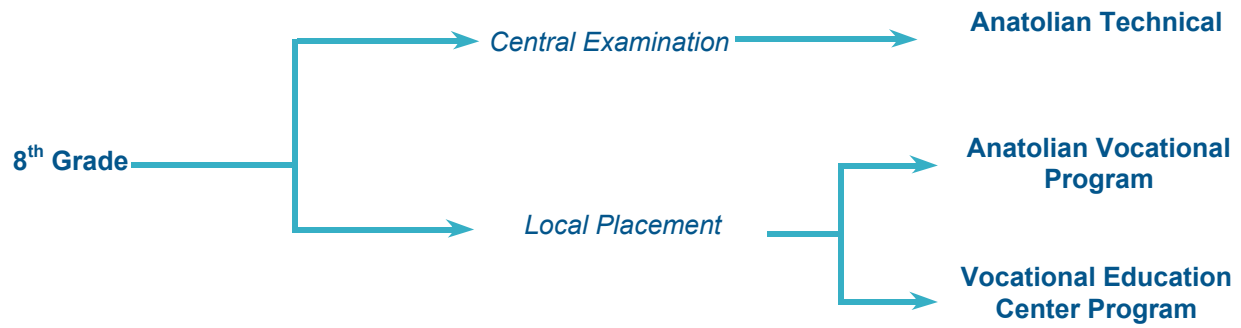
They are intended for students who have the talent of fine arts and who want to educate themselves in the field of painting and music. The first Fine Arts High School of Turkey was opened in academic year 1989-1990.

Sports High Schools

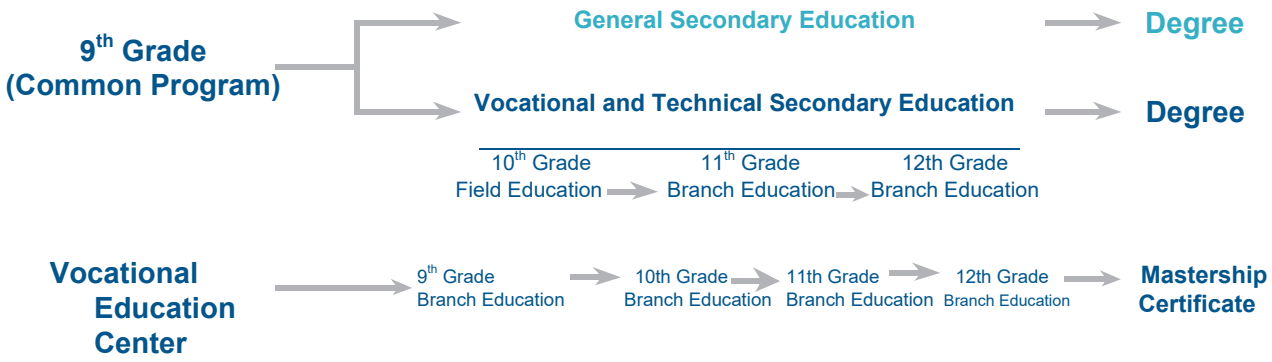
Sports High Schools are day-, boarding-, and coed schools that provide four year education for the graduates of secondary schools or imam-hatip secondary schools. These schools are primarily opened in places where higher education institutions related to physical training and sports exist. Their objective is to provide students with basic knowledge and skills on physical training and sports and play a role in raising qualified human resource for the field of physical training and sports. The first Sports High School of Turkey was opened in academic year 2004-2005.

Education is carried out by distance education, where graduation is based on passing the courses and the credit system (Soylu, 2014). Despite the provision of non-formal education, vocational courses are often given face to face in formal vocational education institutions in order to improve students' skills (Sözer, 2017). Since 2005-2006 academic year, education in Vocational Open High School has been configured to four years.

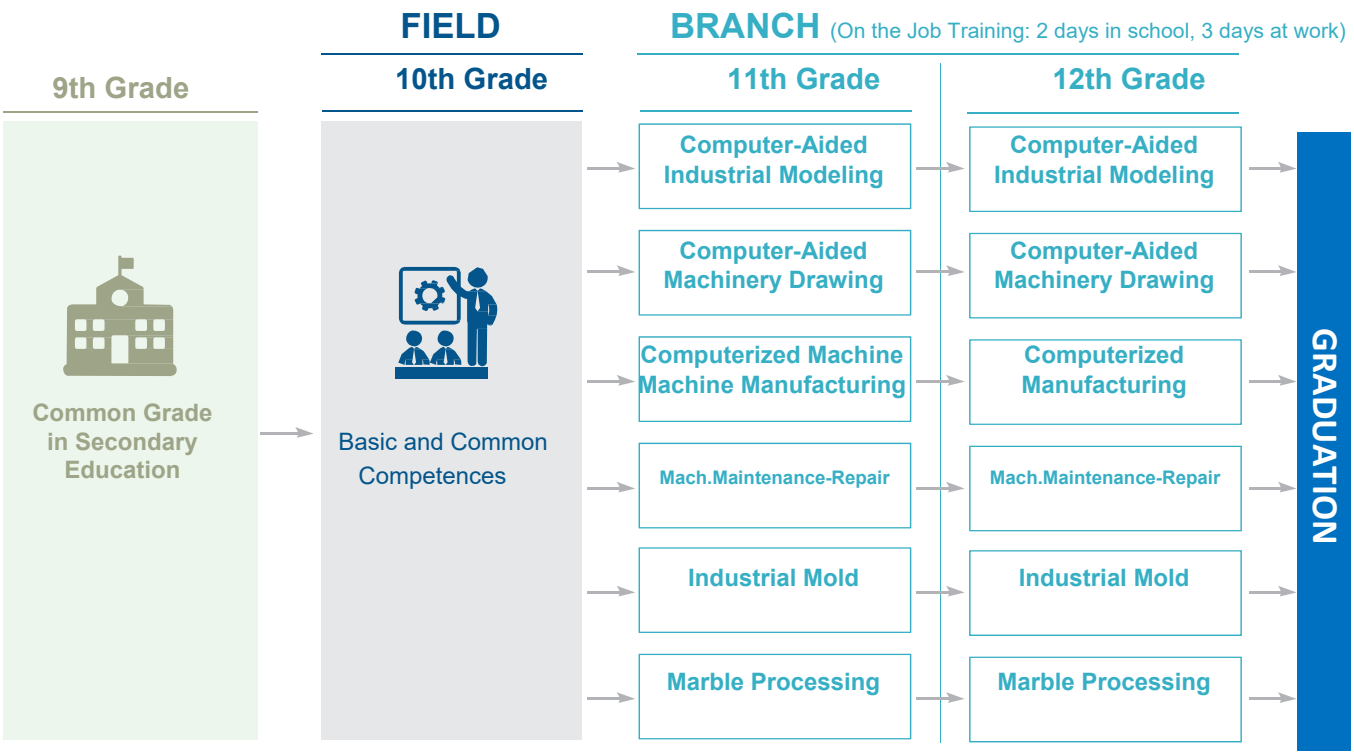
PLACEMENT PROCESS OF VOCATIONAL AND TECHNICAL EDUCATION



VOCATIONAL AND TECHNICAL EDUCATION PROCESS



FIELD EXAMPLE: FIELD AND BRANCHES OF MACHINERY TECHNOLOGY



STAKEHOLDERS OF VOCATIONAL AND TECHNICAL EDUCATION

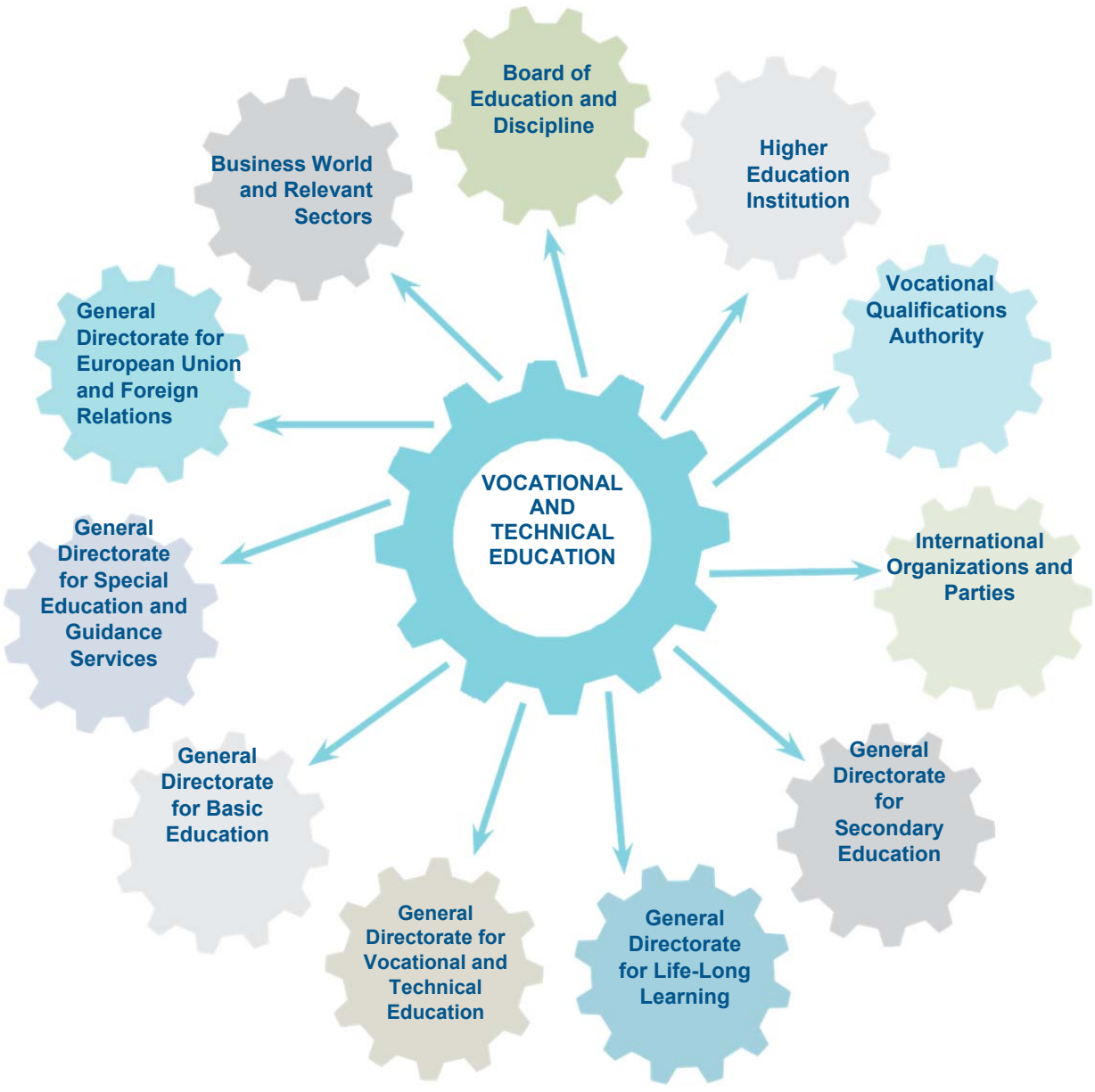
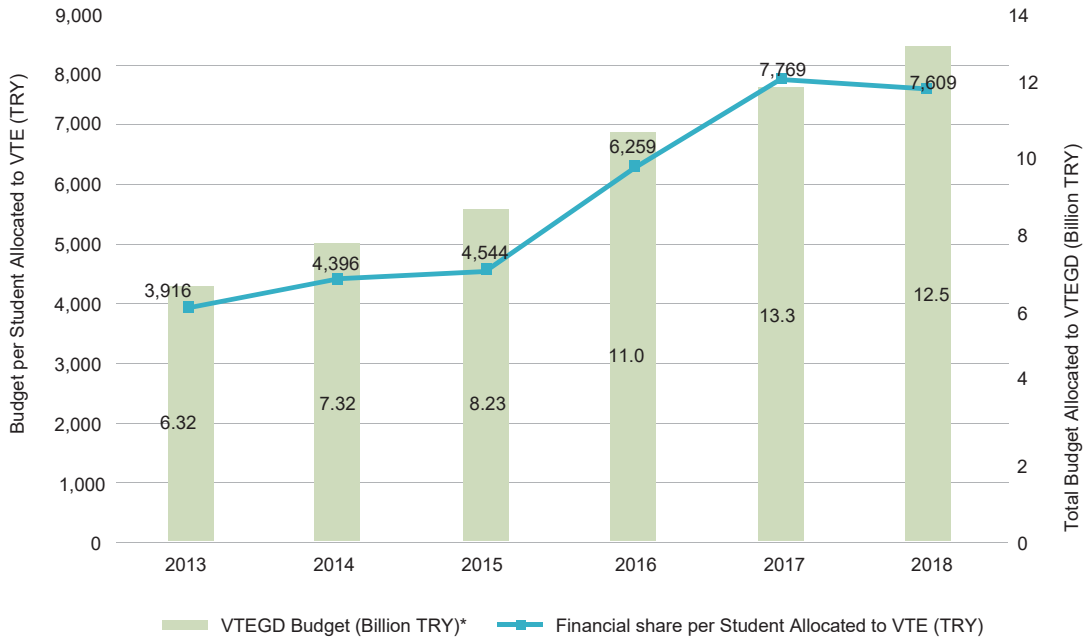


Figure 1 shows the change of the total budget allocated to VTE in 2013-2018 period and of the budget per student. As shown in Figure 1, total budget allocated to vocational and technical education in 2013 was approximately TRY 6.32 billion, and it has reached to TRY 12.5 billion in 2018. While the VTE budget per student was TRY 3.916 in 2013, it has increased to TRY 7,609 in 2018. The fact that both the total budget allocated and the budget per student reach approximately twice in a six-year period are important in terms of increasing the quality of vocational and technical education and emphasizing its importance.

FIGURE 1

ANNUAL CHANGES THE TOTAL BUDGET ALLOCATED TO VTE AND THE BUDGET PER STUDENT



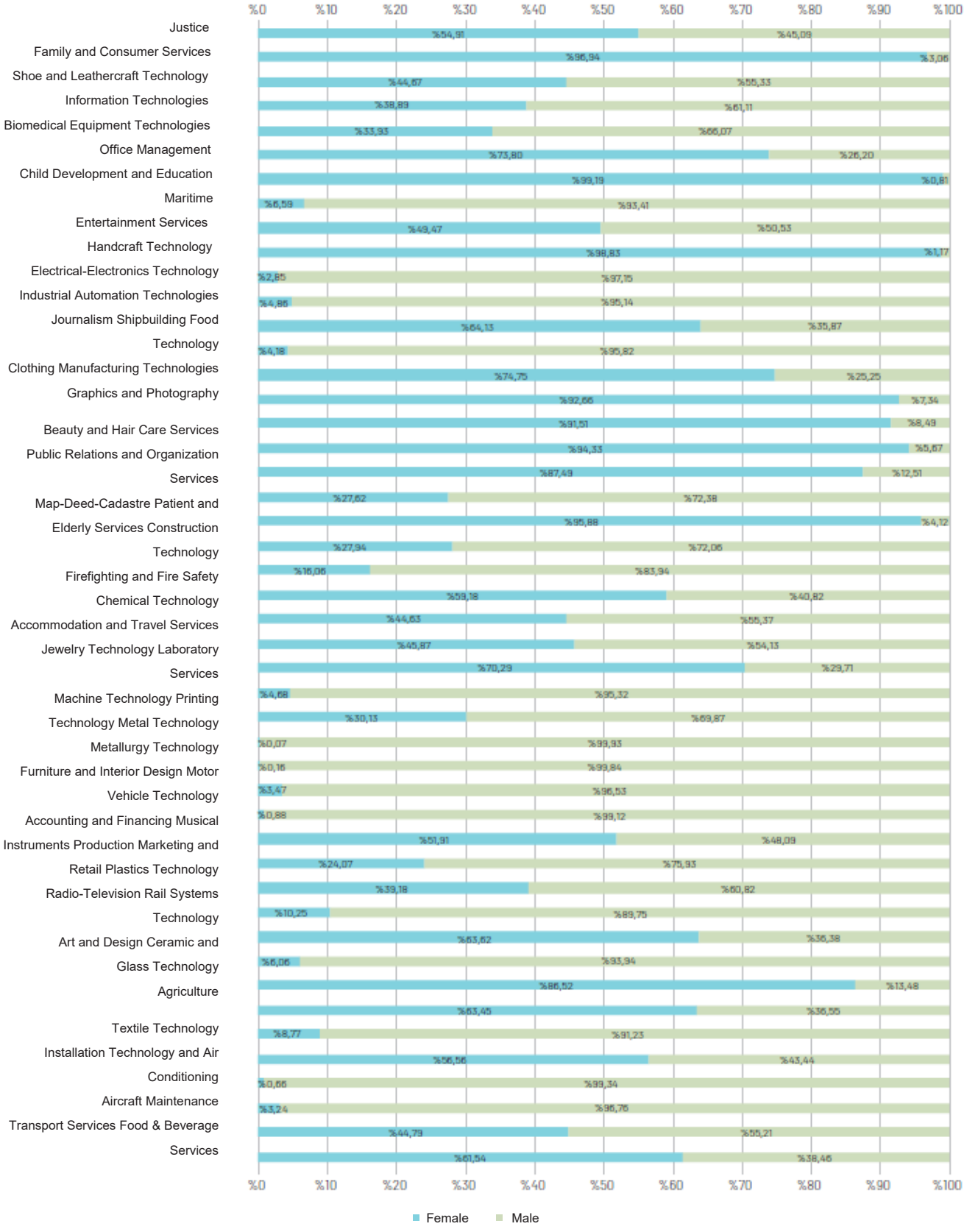
2.4 Fields in Vocational and Technical Education

The vocational and technical education in Turkey has been being presented modular with the Project for Strengthening Vocational and Technical Education (SVTE) since 2005. Occupational analysis, occupational standards, national and international classifications, legislative and other reference documents have been used as resources in determining the areas where students will be educated in vocational and technical education.

Currently, vocational training is offered in 54 fields which are given below. Annex 4 provides detailed explanations of these areas. Figure 2 has been computed by using the total number of graduates who successfully completed their education in vocational education between 2008 and 2014. Evaluating independently from the fields, 55.60% of vocational education graduates are males and 44.40% are females. There are differences in gender distribution to fields in terms of employment conditions and occupational conditions. Occupational fields where the rate of male students are 90% or more are as follows: Metal Technology, Metallurgy, Installation Technology and Air Conditioning, Motor Vehicle Technology, Electrical-Electronics Technology, Aircraft Maintenance, Furniture and Interior Design, Shipbuilding, Machine Technology Industrial Automation Technologies, Rail Systems Technology, and Maritime and Agriculture. Occupational fields where the rate of female students are 90% or more are as follows: Child Development and Education, Handicraft Technology, Family and Consumer Services, Patient and Elderly Services, Beauty and Hair Care Services, Clothing Manufacturing Technology, and Graphics and Photography.

FIGURE 2

GENDER DISTRIBUTION OF GRADUATES IN VOCATIONAL EDUCATION FIELDS



Created by the number of students who received vocational education between the years 2008-2014. Occupational fields that have not been started to be trained in this time period or whose structure has been changed after this time period have not been included.

2.5 Facilities Provided to Students and Graduates

2.5.1 Vocational Training and Internship in Businesses

Students practice their vocational education by means of occupational training and internship in businesses.

Occupational Training in businesses: Vocational and technical education involves skills training in businesses and theoretical education in vocational and technical education schools and institutions, through education and training units established by institutions or businesses. Students of the Anatolian vocational program are trained in skills for three days in businesses during 12th grade, whereas students of vocational training center programs are trained skills for four or five days in businesses as from the 9th grade.

Internship is a vocational training program composed of 40-workday training at businesses in order to enable the students of Anatolian Technical Program to improve their professional knowledge, skills, attitudes and behaviors, adapt to work life, get training in real production and service environment, and be familiar with facilities and equipment not available in school.

2.5.2 Skills Training and Internship in Overseas Businesses

A student can also serve his/her skills training and internship related to his/her field of study in an overseas business under a twin school program, an international bilateral agreement or protocol or a project, provided that the student assumes all kinds of responsibility and the relevant costs are covered by the student or within the scope of a project, including insurance.

2.5.3 Insurance Procedures

In order for students to continue their education in security and not to be victimized in any negative situation, every student is insured against occupational accidents and occupational diseases from the 9th grade in the Vocational Education Center programs and from the 10th grade in Anatolian technical and Anatolian vocational programs.

In order to raise the qualified workforce for the sector and reduce the financial burden on the sector, every employer pays at least 30% of the minimum wage to each apprentice and vocational high school student.

2.5.4 Scholarship and Boarding Opportunities

A student with inadequate financial possibilities can benefit from boarding opportunities as well as scholarship opportunities depending on his/her score of Scholarship Exam for Primary and Secondary Education Institutions (SEPSEI).

Furthermore, successful students with inadequate financial possibilities are provided with special scholarship support within the scope of cooperation protocols with institutions and organizations.

2.5.5 Portal for Tracking Vocational and Technical Secondary Education Graduates

Information on schools and fields, news, links, and other information about the vocational and technical secondary education system are accessible through the e-graduate system. (http://emezun.meb.gov.tr/default.aspx)

2.5.6 Benefiting from On-the-Job Training Programs of İŞKUR

- Every student of a Vocational and Technical Anatolian High School who want to improve his/her knowledge, skills and experience about the profession s/he is studying can benefit from on-the-job training programs, provided by the Turkish Employment Agency (İŞKUR) for individuals aged 15 and over, during the summer holidays.
- Students who attend the on-the-job training program are paid. Moreover, their contributions for occupational accident, occupational diseases, and general health insurance are covered.
- They can get support from İŞKUR's labor and vocational counselors and benefit from the journal LVC İŞKUR Support to Choice of Profession published by İŞKUR.

2.5.7 Science, Art, Culture and Sports Activities

In order to support the multi-faceted development of students, the following are organized:

- International MoNE Robot Contest,
- Book reading contest,
- Various contests and events under cooperation protocols signed with the institutions and organizations.

2.5.8 Rights Granted to Graduates

Every vocational and technical education graduate is given the title of technician. **Additional points** are given to every graduate who wishes to study in the field according to his/her result from the examination while from vocational and technical secondary education to vocational colleges. The following address should be visited for higher education programs where additional points are given depending on the professional field studied after graduation: https://yokatlas.yok.gov.tr/

Under the scope of the protocol signed with KOSGEB, KOSGEB provided every vocational education graduate with a grant of **TRY 50 thousand** and **TRY 100 thousand interest-free credit**.

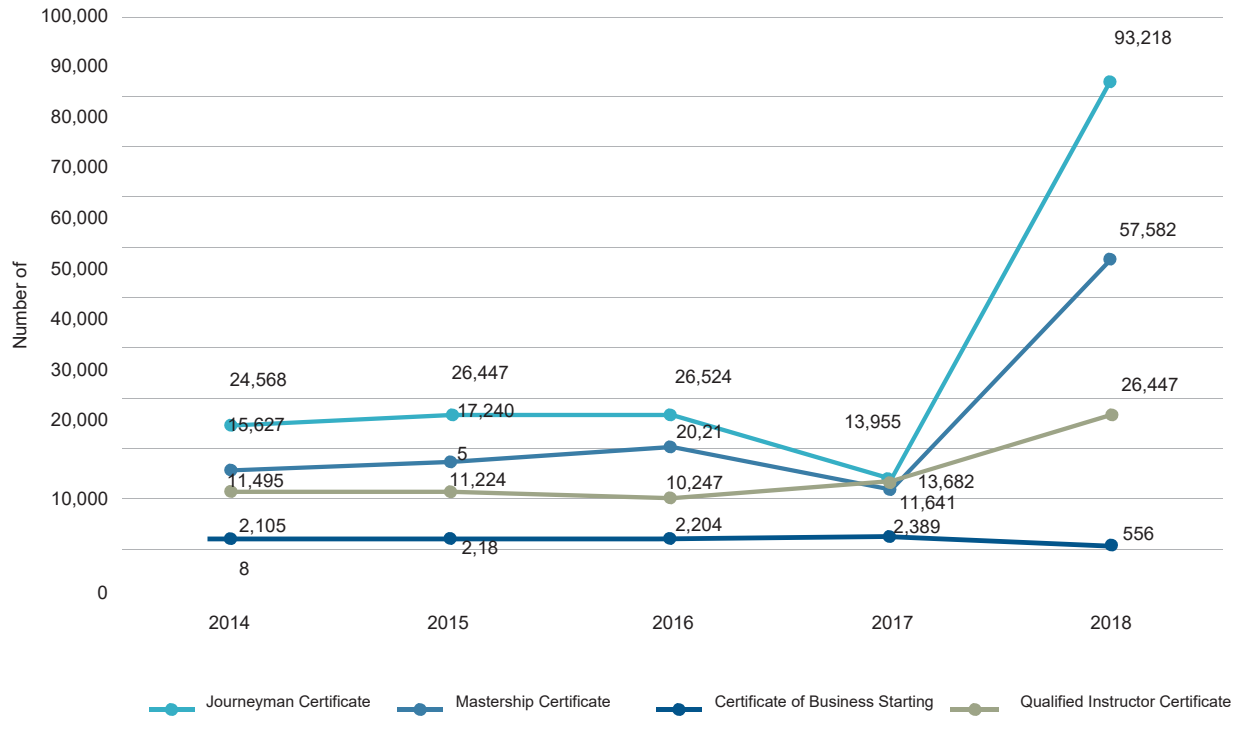
2.5.9 Certificates And Titles Awarded to Graduates

- Degree for the field and branch (VTAHS)
- Mastership and journeyman certificate (VECP)
- Title of technician
- Certificate of business starting
- EUROPASS certificate
- Certificate proofing the achieved modules, courses, and credits

Figure 3 shows the numbers of students and teachers who received vocational and technical education certificates of journeyman, master, business starting, and qualified instructor between the years 2014-2018. As shown in Figure 3, the numbers of students and teachers who received certificates of journeyman, master, business starting, and qualified instructor between the years 2014-2016 are relatively close to each other. While there is a significant increase in the number of students and teachers who received certificates of journeyman, master, or qualified instructor in 2018, the number of graduates who received certificates of business starting has declined.

FIGURE 3

CHANGE IN THE NUMBER OF CERTIFICATES AWARDED TO GRADUATES BY YEARS



2.5.10 Quality Processes

The whole of processes and methods for analyzing and monitoring the services provided, processes followed, and facilities controlled in vocational and technical secondary education is called quality management. Quality management provides an internal control system based on measurement for institutions to achieve their goals and strategies. Having a quality assurance system does not assure the institutions in terms of quality, but provides an objective assessment of the path followed in terms of achieving the objectives (Özer, Gür and Küçükcan, 2010).

Effective quality management; it should determine and control whether the standards are being met and/or how the quality service will be served, and finally ensure the same. There are four important aspects in order for the vocational and technical education to follow effectively for assuring quality.

1. Persons (educator, administrators, etc.) involved in carrying out quality services or processes should be qualified. Such persons know what is expected from them to meet the needs of the students and the sector.

2. The working environment of the staff should be in accordance with the educational programs provided. There should be a workshop or laboratory in every vocational and technical secondary education institution. Access to workshops and laboratories of other institutions and organizations should be provided in case of insufficiency. In addition, these workshops and laboratories must have safe and healthy conditions for students to work.
3. The tools, equipment and materials used by the personnel should be provided at minimum level.
   Resources should meet the programs and qualifications given by vocational and technical secondary education institutions. Furthermore, every program must have resources compatible with the number of students.
4. Deciding whether a student has the required level of practical skills or passed the written exams is a very important task, and it should be evidence based.

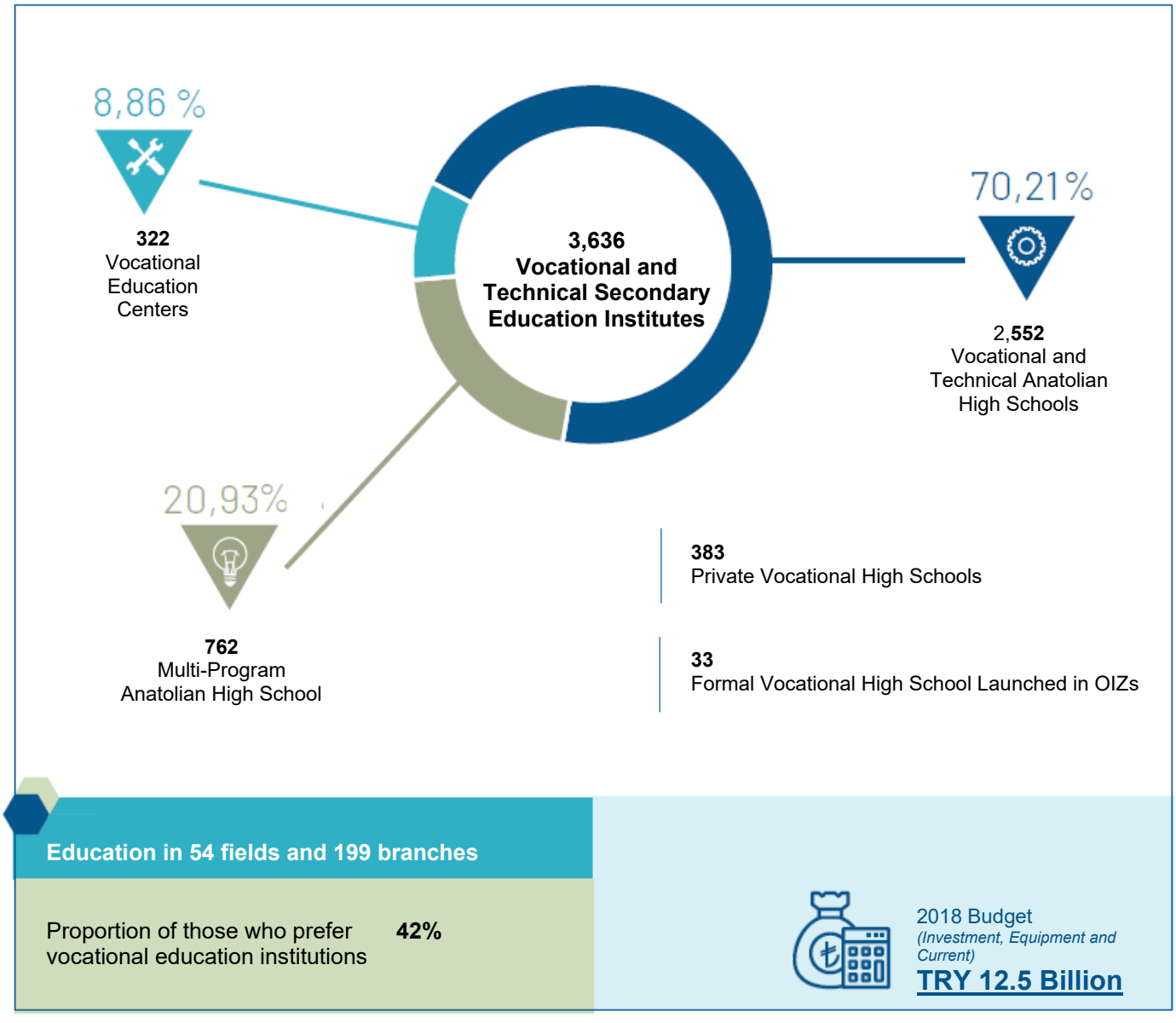
The combination of quality standards in personnel, work and training environments, tools, equipment and materials, products and decisions ensures an effective quality management system.

2.6 Vocational and Technical Education Statistics

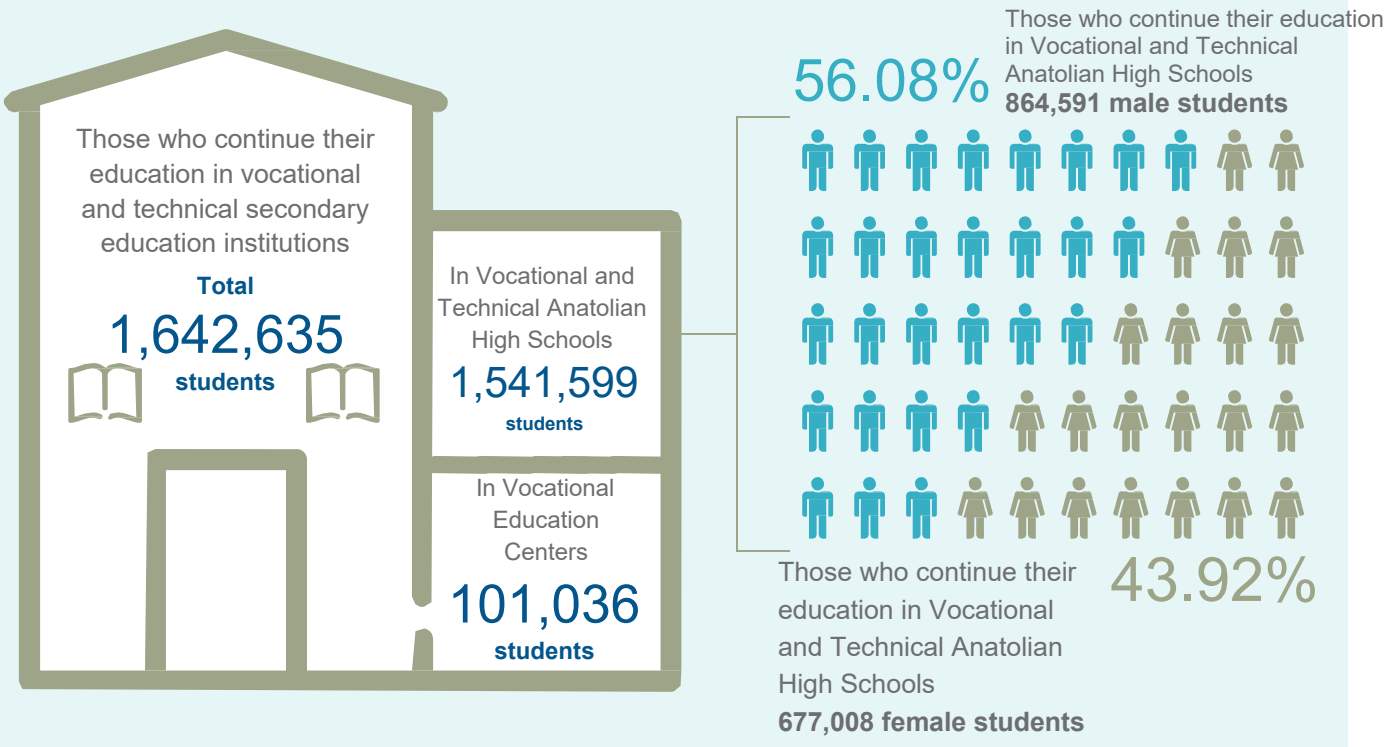
As of the 2017-2018 academic year, there are 1,642,635 students attending formal education in vocational and technical secondary education institutions affiliated to VTEGD. 864,591 (56.08% of the students are male and 677,008 (43.92%) are female; whereas 1,541,599 students are being educated in Vocational and Technical Anatolian High Schools, and 101,036 in Vocational Education Centers. The total number of vocational and technical secondary education institutions in Turkey is 3,636, and 2,552 (70.21%) of these institutions are Vocational and Technical Anatolian High Schools

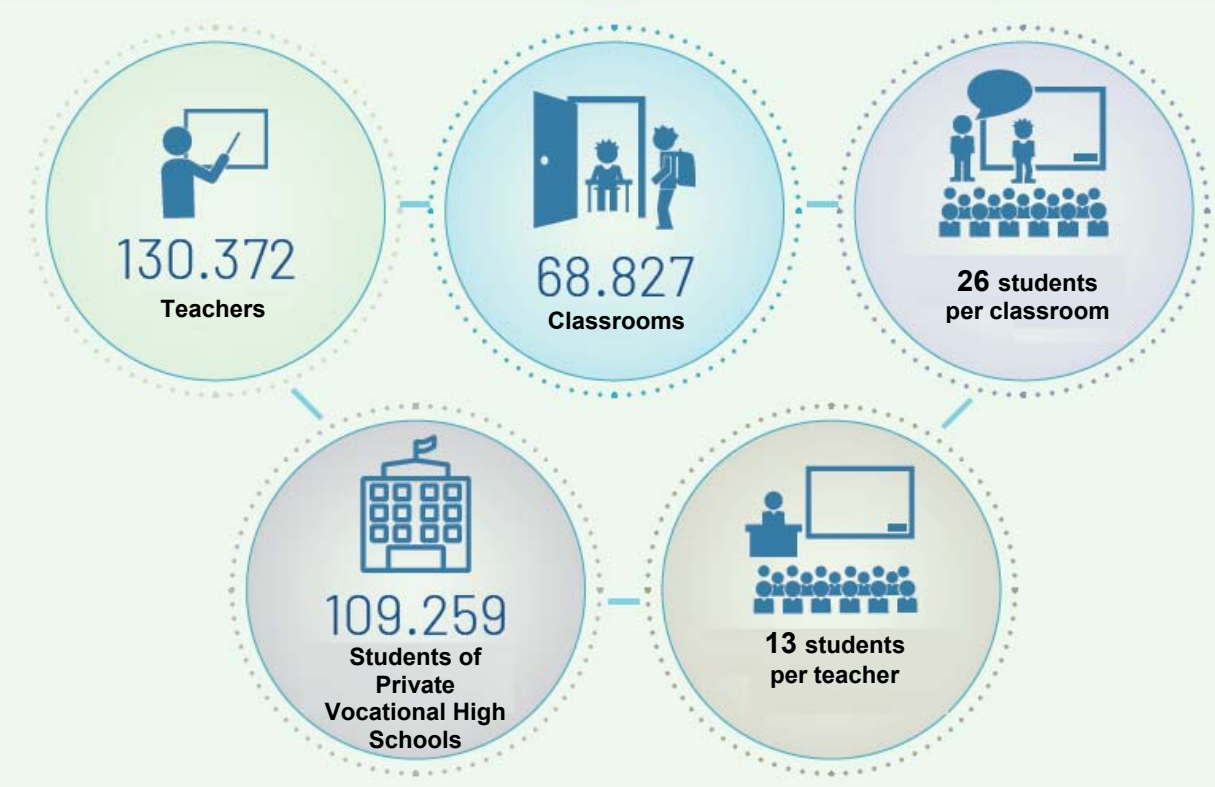
762 (20.93%) are Multi-Program Anatolian High School, and 322 (8.86%) are Vocational Education Centers.

Indicators considered to be important for monitoring the development of vocational and technical education in Turkey are addressed under this heading. In this context, the number of students, teachers and schools, revolving fund revenues and employment status of graduates have been examined.



IN ACADEMIC YEAR 2017-2018





2.6.1 Number of Students, Teachers, and Schools by Years

Number of students and graduates of vocational and technical secondary education is an important indicator of the demand in this area. Number of teachers and schools/institutions provides information regarding the steps taken to raise the efficiency and quality of vocational and technical education. The change in the number of students, teachers and schools in vocational and technical secondary education institutions over the years has been shown in Figure 4. As shown in Figure 4, there have been changes in the number of students in terms of increase and decrease in the ten-year period from 2008-2009 academic year to 2018-2019 academic year. Despite the increase between 2008-2009 and 2014-2015, the number of students has started to decline since 2014-2015, and decreased to the lowest level of the last five years in 2018-2019.

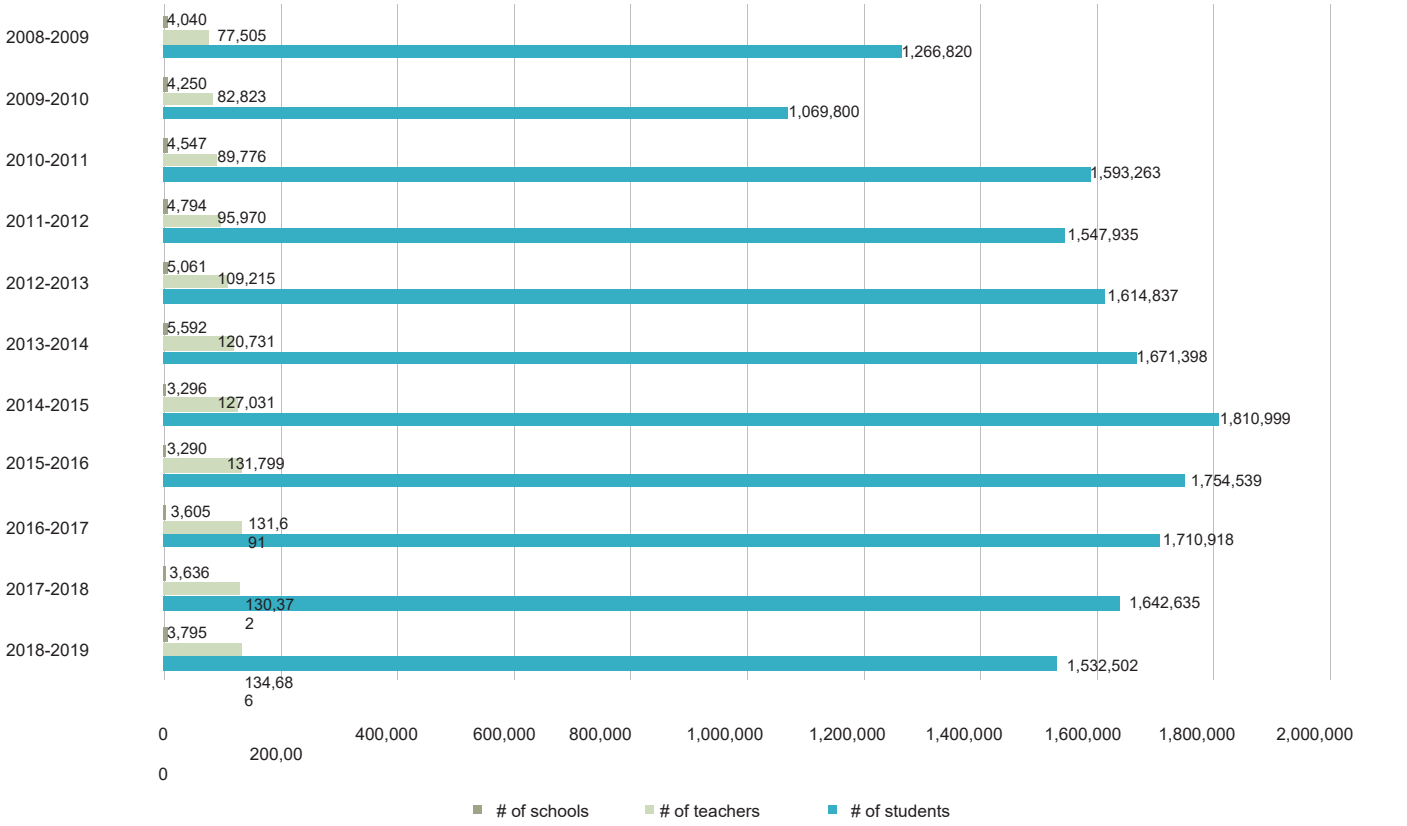
The continuous increase in the number of teachers in the ten-year period is regarded as an important factor increasing the quality of vocational and technical education.

Figure 4 shows that the proportion of students per teacher in vocational and technical secondary education for 2008-2009 academic year is approximately 17, which has declined in 2018-2019 to about 11. Therefore, teacher-student interaction in vocational and technical secondary education has been enhanced, hence students have been provided with more qualified education.

The change in school numbers over the years shown in Graph 4 can be grouped as before and after 2014-2015. The increase in the number of schools in starting in 2008-2009 reached the highest level in 2013-2014 but the structure and types of schools were changed with the regulation issued in that year.

FIGURE 4

NUMBER OF EDUCATIONAL INSTITUTIONS, TEACHERS, AND STUDENTS (2008-2018)



Fine Arts and Sports High Schools are included in 2018-2019 academic year.

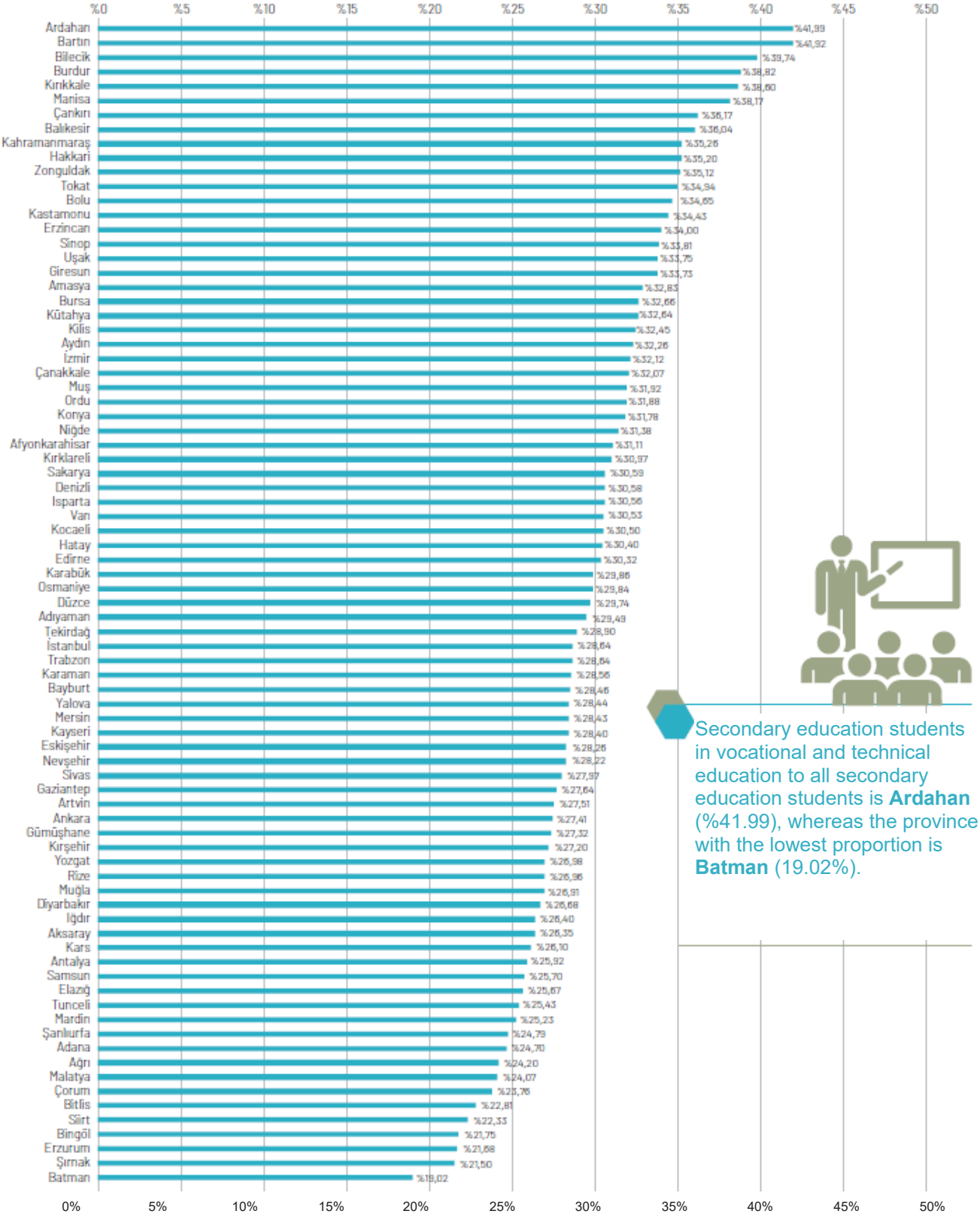
2.6.2 Proportions of Students in Vocational and Technical Secondary Education by Provinces

In 2018-2019 academic year, the total number of students in secondary education and the number of students in vocational education by provinces have been examined, so that the proportion of students in vocational education by provinces have been determined.

According to Figure 5, the province with the highest proportion of secondary education students in vocational and technical education to all secondary education students is Ardahan (%41.99), whereas the province with the lowest proportion is Batman (19.02%).

FIGURE 5

RATIO OF STUDENTS UNDERGOING VOCATIONAL AND TECHNICAL EDUCATION TO SECONDARY EDUCATION STUDENTS BY PROVINCES (2018-2019)



Secondary education students in vocational and technical education to all secondary education students is **Ardahan** (%41.99), whereas the province with the lowest proportion is **Batman** (19.02%).

Vocational and Technical Education Schools affiliated with VTEGD are included.

2.6.3 Number of Students, Teachers, Graduates, Branches, and Schools in Vocational and Technical Education by Years

The numbers of students, teachers and graduates, which are the main indicators in vocational and technical education, are examined in Figure 6, and the number of branches and schools are examined within the scope of the regions created according to Nomenclature of Territorial Units for Statistics in Figure 7.

Chart 6 shows that the region with the highest number of students and graduates is the Istanbul Region and the region with the highest number of teachers is the Aegean region. The regions with the lowest number of students having vocational education are Northeast Anatolia, East Black Sea and West Marmara, respectively. The ratio of students per teacher, calculated approximately 11% for the entire country, is highest in Istanbul Region with 14%, and lowest in Eastern Black Sea with 9%.

As seen in Figure 7, the region with the highest number of branches is Istanbul. Since the region with the highest number of students in vocational and technical education is Istanbul, the fact that Istanbul has a high number of branches is not surprising. However, the highest number of schools is in the Aegean region. The two regions with the least number of schools are Northeast Anatolia and Eastern Black Sea.

FIGURE 6

NUMBER OF STUDENTS, TEACHERS, AND GRADUATES IN VOCATIONAL EDUCATION BY NOMENCLATURE OF TERRITORIAL UNITS FOR STATISTICS (2018-2019)

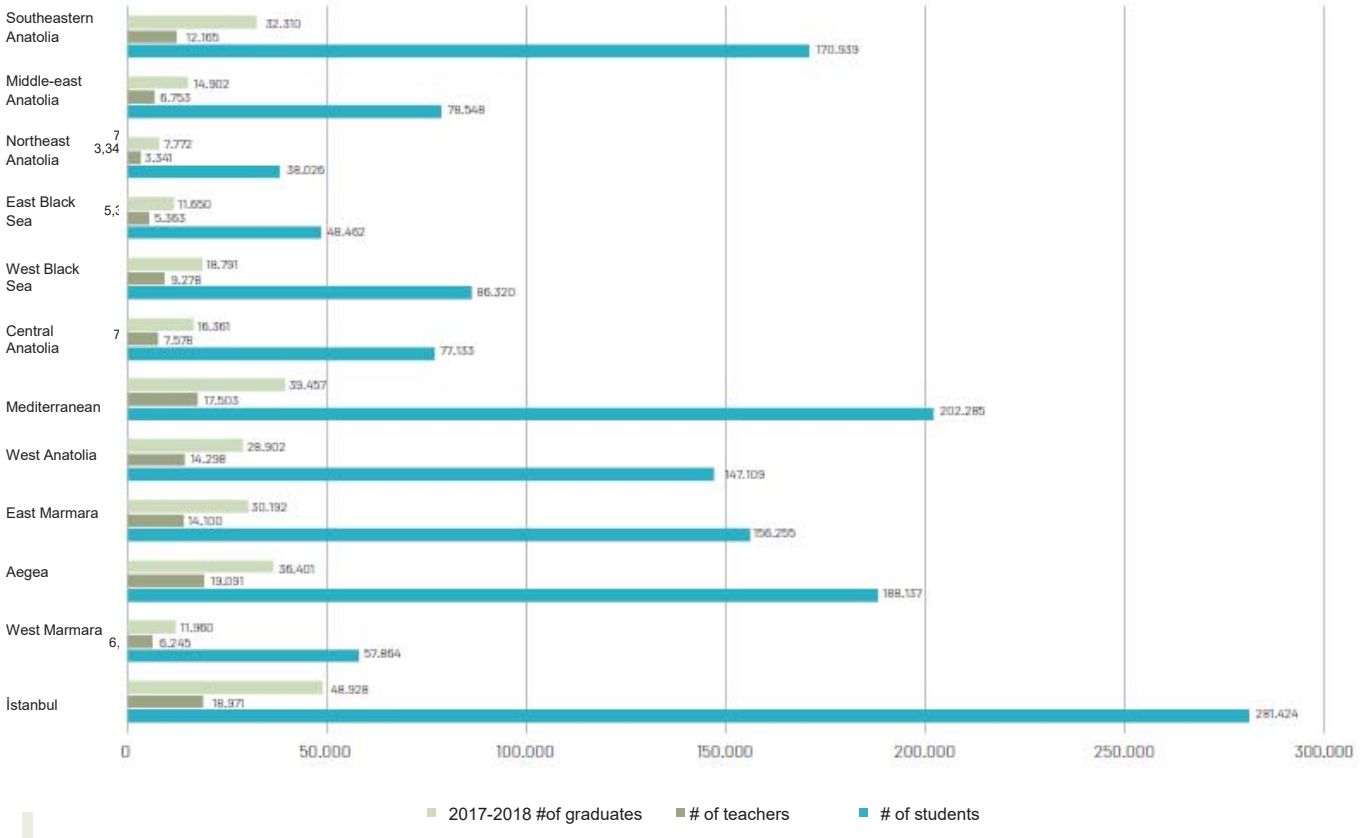
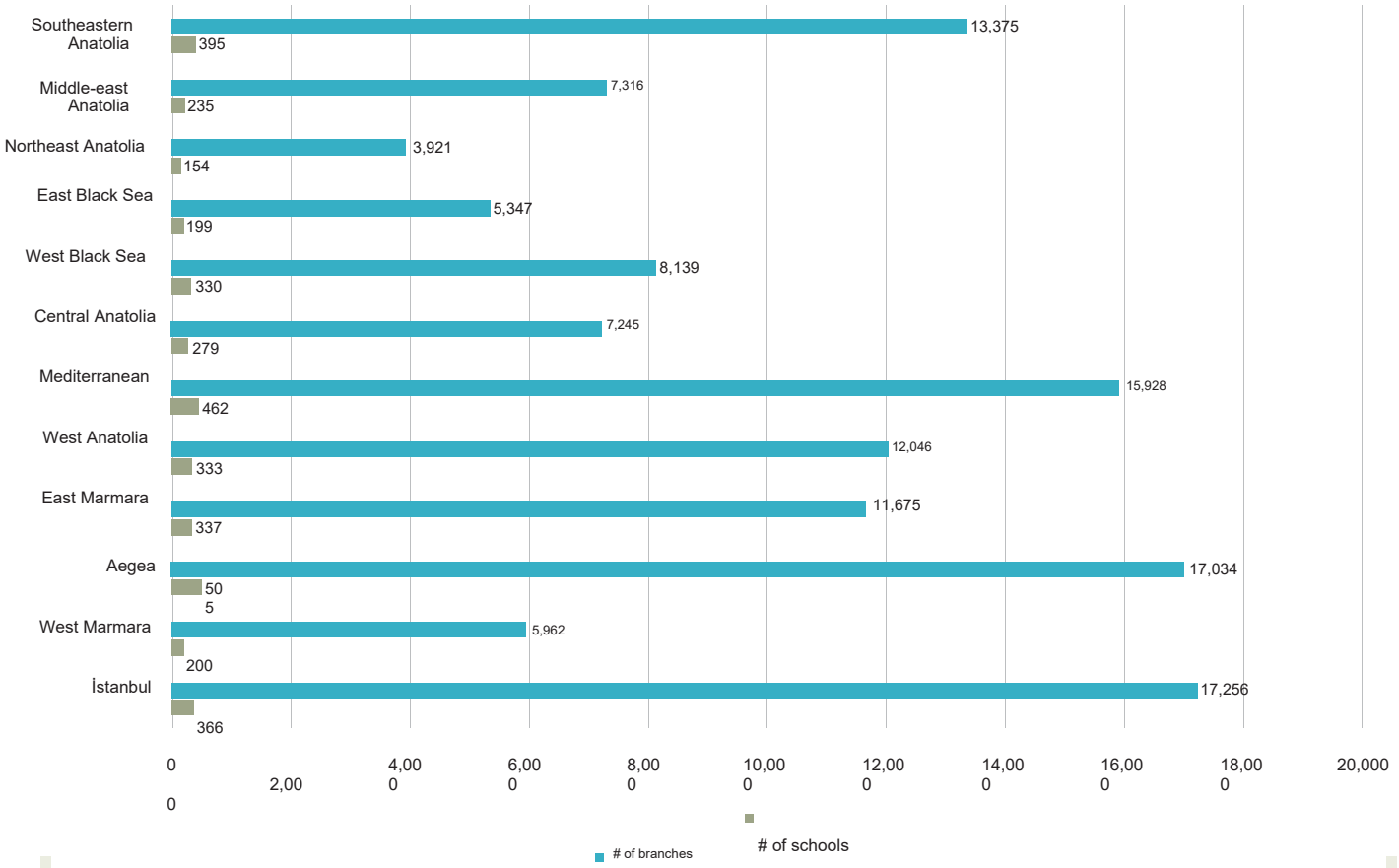


FIGURE 7

NUMBER OF BRANCH AND SCHOOL IN VOCATIONAL EDUCATION BY NOMENCLATURE OF TERRITORIAL UNITS FOR STATISTICS (2018-2019)



2.6.4 Revolving Fund

774 of Vocational and Technical Anatolian High Schools and Vocational Education Centers make production and provide services under revolving funds. The activities carried out within this scope provide students with opportunity to apply output-oriented hands-on training and play an important role in gaining permanent skills that the sector demands.

As shown in Table 1, Vocational and Technical Anatolian high schools and Vocational Education Centers generated TRY 217,197,959 in revenue thanks to production in 2017.

TABLE 1

TOTAL REVOLVING FUND REVENUES İN 2017

Number of Schools with Revolving Fund	774
Total Revenue in 2017 (TRY)	TRY 217,197,959

Table 2 shows the revolving fund revenue segments. In 2017, 131 of the 774 schools where revolving fund activities were carried out could not generate income. 207 of the schools generated income between TRY 10,001- 100,000. The number of schools with income higher than TRY 1,000,000, the highest income segment, is 54. Among these 54 schools, four schools are in Ankara and Antalya and three schools are in Isparta and Şanlıurfa.

As shown in Table 3, 25.24% of Vocational and Technical Anatolia High Schools, 0.79% of Multi-program Anatolian High Schools, and 7.72% of Vocational Education Centers have been generating income through revolving fund activities. Proportions of schools where revolving fund activities are not active although present are as follows: 3.05% of Vocational and Technical Anatolian

TABLE 2

NUMBER OF INSTITUTION BY BRACKETS OF REVOLVING FUND REVENUES

Brackets Of Revolving Fund Revenues	# of
Number of Schools with no Revolving Fund Revenues	131
Lower than TRY 5,000	49
Between TRY 5,001 and TRY 10,000	26
Between TRY 10,001 and TRY 100,000	207
Between TRY 100,000 and TRY 250,000	147
Between TRY 250,001 and TRY 500,000	103
Between TRY 500,001 and TRY 1,000,000	57
Higher than 1,000,000	54
TOTAL	**774**

High Schools, 0.95% of Multi-program Anatolian High Schools, and 0.34% of Vocational Education Centers. Failure to conduct revolving fund activities in most of schools of all three school types limits the added value generated by production. There are no revolving fund activities in 71.71% of the Vocational and Technical Anatolia High Schools, 98.26% of Multi-program Anatolian High Schools, and 91.95% of Vocational Education Centers.

TABLE 3

REVOLVING FUND OPERATIONS BY SCHOOL TYPES

	VTAHS Percent (%)	MPAHS Percent (%)	VEC Percent (%)
Active	25.24	0.79	7.72
Not active	3.05	0.95	0.33
None	71.71	98.26	91.95

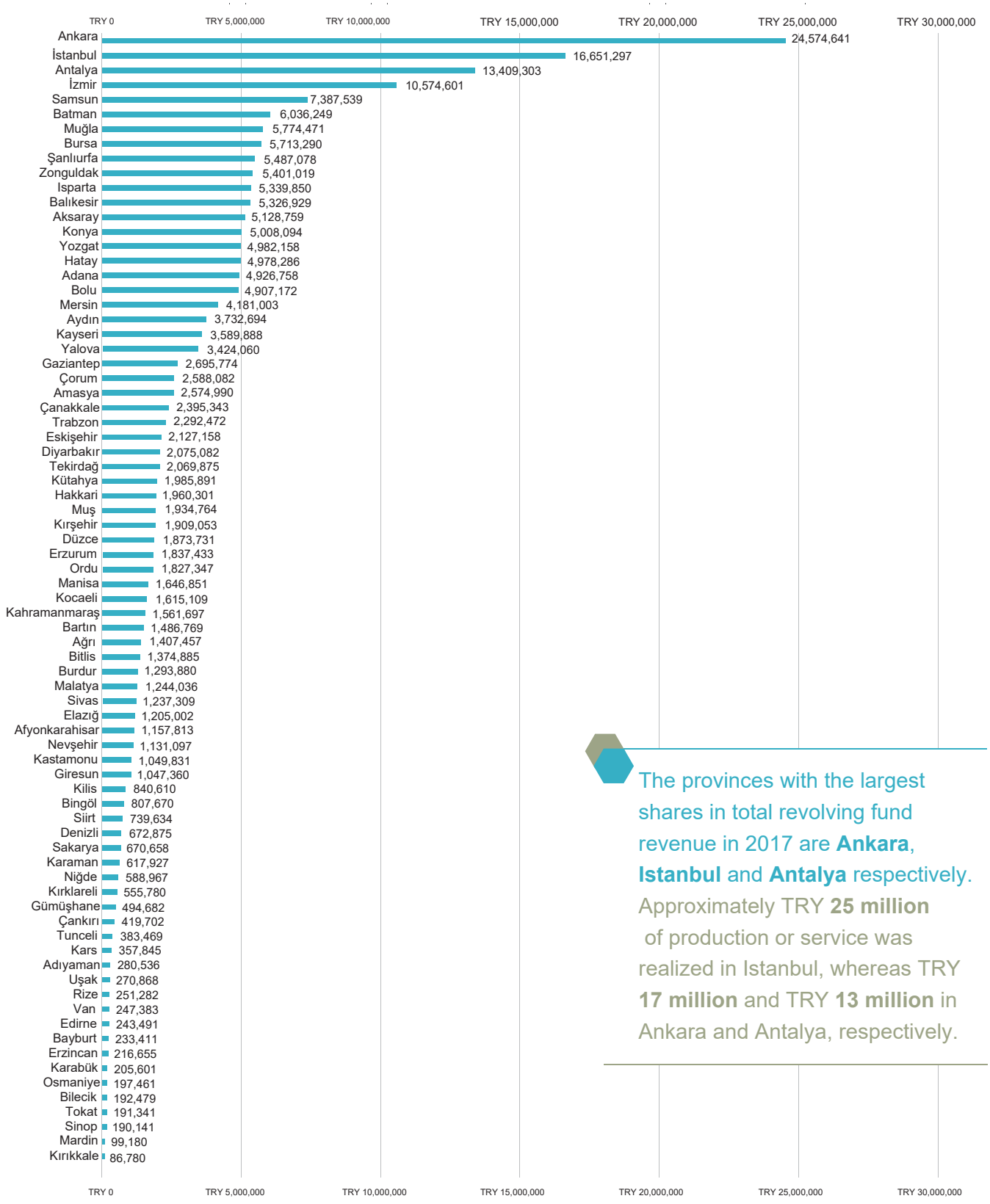
Figure 8 shows the revolving fund revenues by provinces for the year 2017. The provinces with the largest shares in total revolving fund revenue in 2017 are Ankara, Istanbul and Antalya respectively. Approximately TRY 25 million of production or service was realized in Istanbul, whereas TRY 17 million and TRY 13 million in Ankara and Antalya, respectively.

Table 4 shows 50 schools with the highest revolving fund revenue. Four of these schools are in Ankara, whereas three in Antalya and another three in Isparta.

As shown in Table 4, the top three schools with the highest revolving fund revenue are in Batman, Ankara, and Samsun. Batman Vocational and Technical Anatolian High School in Batman generated a revolving fund revenue of TRY 5,455,491 in 2017. 2017 revolving fund revenues of Siteler Vocational Education Center in Ankara and Atakum Vocational and Technical Anatolian High School in Samsun are TRY 4,797,755 and TRY 4,539,865, respectively. The total revolving fund revenue generated in 2017 by the top 50 schools given in Table 4 is TRY 104,238,266.

FIGUR

REVOLVING FUND REVENUES OF VOCATIONAL EDUCATION INSTITUTIONS BY PROVINCES (2017)



The provinces with the largest shares in total revolving fund revenue in 2017 are **Ankara**, **Istanbul** and **Antalya** respectively. Approximately TRY **25 million** of production or service was realized in Istanbul, whereas TRY **17 million** and TRY **13 million** in Ankara and Antalya, respectively.

TABLE 4

50 SCHOOLS WITH THE HIGHEST REVOLVING FUND REVENUES

Rank	Province	District	School or Institution Name	Revolving Fund Revenues in 2017
1	Batman	Central District	Batman Vocational and Technical Anatolian High School	5,455,491
2	Ankara	Altındağ	Siteler Vocational Education Center	4,792,755
3	Samsun	Atakum	Atakum Vocational and Technical Anatolian High School	4,539,865
4	Balıkesir	Ayvalık	Cunda Vocational and Technical Anatolian High School	4,526,904
5	Yozgat	Central District	Fatih Vocational and Technical Anatolian High School	4,463,818
6	Ankara	Yenimahalle	Gazi Vocational Education Center and 4th Evening Trade School	4,013,389
7	Antalya	Manavgat	Manavgat Evliya Çelebi Vocational and Technical Anatolian High School	3,608,967
8	Ankara	Altındağ	Atatürk Vocational and Technical Anatolian High School	3,205,375
9	Antalya	Muratpaşa	Falez Vocational and Technical Anatolian High School	3,174,301
10	Aksaray	Central District	Uluırmak Vocational and Technical Anatolian High School	2,892,725
11	Adana	Seyhan	Nezihe Yalvaç Vocational and Technical Anatolian High School	2,593,432
12	Bolu	Central District	İzzet Baysal Abant Vocational and Technical Anatolian High School	2,578,367
13	Yalova	Central District	Şaban Temuge Vocational and Technical Anatolian High School	2,552,464
14	Aydın	Kuşadası	Güvercinada Vocational and Technical Anatolian High School	2,530,660
15	Konya	Ereğli	Ereğli TOKİ Vocational and Technical Anatolian High School	2,507,305
16	Amasya	Central District	Amasya İMKB Vocational and Technical Anatolian High School	2,492,821
17	Aksaray	Central District	Aksaray Vocational and Technical Anatolian High School	2,132,364
18	Zonguldak	Ereğli	Zübeyde Hanım Vocational and Technical Anatolian High School	2,085,984
19	Kayseri	Melikgazi	Kayseri Vocational and Technical Anatolian High School	1,857,214
20	Hakkari	Central District	Atatürk Vocational and Technical Anatolian High School	1,766,868
21	Isparta	Central District	Gül Vocational and Technical Anatolian High School	1,758,308
22	Çanakkale	Central District	Çanakkale Kepez Vocational and Technical Anatolian High School	1,677,330
23	Zonguldak	Alaplı	Alaplı Multi-Program Anatolian High School	1,605,943
24	Muş	Central District	Muş Vocational and Technical Anatolian High School	1,578,095
25	Şanlıurfa	Haliliye	Urfa Vocational and Technical Anatolian High School	1,558,924
26	Isparta	Yalvaç	Yalvaç Antik Kent Vocational and Technical Anatolian High School	1,547,679
27	Eskişehir	Tepebaşı	Ali Güven Vocational and Technical Anatolian High School	1,490,458
28	Adana	Sarıçam	Evliye Çelebi Vocational and Technical Anatolian High School	1,479,506
29	Şanlıurfa	Karaköprü	Gap Vocational and Technical Anatolian High School	1,478,400
30	İstanbul	Beşiktaş	Etiler Vocational and Technical Anatolian High School	1,460,305
31	Tekirdağ	Süleymanpaşa	Süleymanpaşa Vocational and Technical Anatolian High School	1,448,300
32	İzmir	Buca	Buca Vocational and Technical Anatolian High School	1,442,685
33	İzmir	Konak	Konak Çınarlı Vocational and Technical Anatolian High School	1,368,468
34	Antalya	Kaş	Kaş Vocational and Technical Anatolian High School	1,330,567
35	Diyarbakır	Yenişehir	Diyarbakır Vocational and Technical Anatolian High School	1,326,134
36	Hatay	Payas	Payas Vocational and Technical Anatolian High School	1,302,150
37	Bartın	Amasra	Amasra Vocational and Technical Anatolian High School	1,286,711

TABLE 4

50 SCHOOLS WITH THE HIGHEST REVOLVING FUND REVENUES (continued)

Rank	Province	District	School or Institution Name	Revolving Fund Revenues in 2017
38	Isparta	Eğirdir	Eğirdir Nafiz Yürekli Vocational and Technical Anatolian High School	1,280,661
39	Muğla	Ortaca	Ortaca Dalyan H .F. Tınaztepe Vocational and Technical Anatolian High School	1,265,715
40	Düzce	Central District	Düzce Zübeyde Hanım Vocational and Technical Anatolian High School	1,253,784
41	Bitlis	Central District	Bitlis Vocational and Technical Anatolian High School	1,242,910
42	Samsun	İlkadım	Samsun Şehit İlhan Hanlı Vocational and Technical Anatolian High School	1,233,373
43	Hatay	Dörtyol	Recep Atakaş Vocational and Technical Anatolian High School	1,227,089
44	Trabzon	Akçaabat	Akçaabat Atatürk Vocational and Technical Anatolian High School	1,224,080
45	Mersin	Tarsus	Tarsus Vocational and Technical Anatolian High School	1,165,872
46	Elazığ	Central District	Elazığ Vocational and Technical Anatolian High School	1,148,087
47	Muğla	Fethiye	Şehit Yüzbaşı Özgür Öztekin Vocational and Technical Anatolian High School	1,080,469
48	İstanbul	Zeytinburnu	Zeytinburnu M. İhsan Mermerci Vocational and Technical Anatolian High School	1,075,291
49	Gaziantep	Şehitkamil	Mehmet Akif Ersoy Vocational and Technical Anatolian High School	1,066,118
50	Ankara	Çankaya	Çankaya İMKB Vocational and Technical Anatolian High School	1,063,789
			TOTAL	104,238,266

Income per student generated by means of revolving fund activities is sorted by provinces and presented in Figure 9. As shown in Figure 9, the province with the highest revolving fund income per student, TRY 2,508, is Batman. The revolving fund income per student in Tunceli, the closest province to Batman, is TRY 2,491. 23 provinces are over the average of Turkey (TRY 685.66), where the other 58 are below the average. As shown in Figure 15, the vocational and technical secondary education institutions in Ardahan, Artvin, Iğdır and Şırnak do not have any revolving fund revenue, although they have revolving fund activities.

The revolving fund revenues per teacher of vocational and technical secondary education institutions by provinces are given in Figure 10. As shown in Figure 10, the top three provinces with the highest revolving fund revenue per teacher are Batman, Hakkari, and Yozgat. These three provinces rank high both in the provinces ranking in Figure 8 and the ranking of revolving fund revenue per student in Figure 9. The fact that these three provinces, with relatively high revolving fund revenues, have fewer teachers compared to metropolitan cities allows them to reach higher ranks in Graph 10.

FIGURE 9

REVOLVING FUND REVENUES PER STUDENT BY PROVINCES

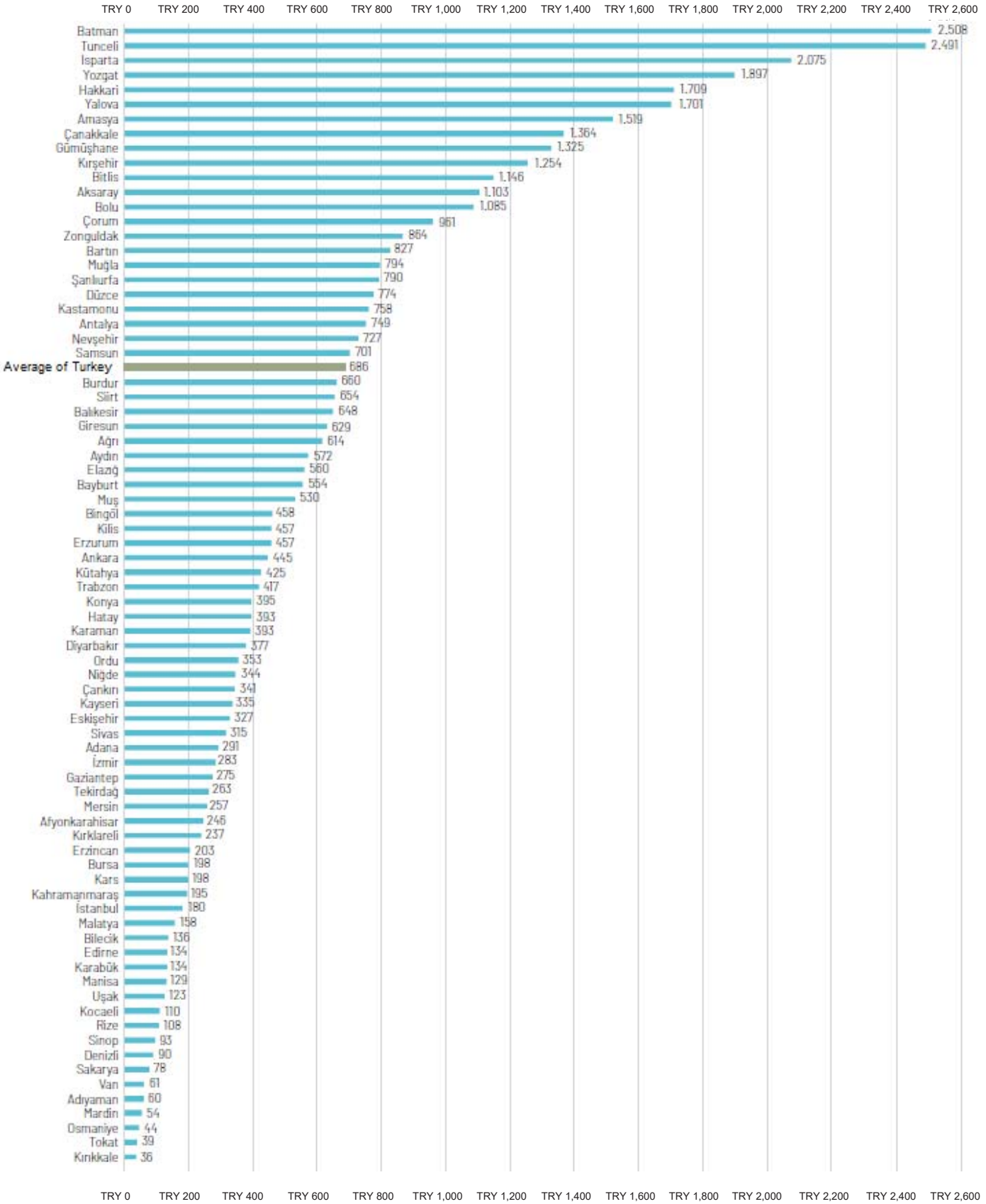


FIGURE 10

REVOLVING FUND REVENUES PER TEACHER BY PROVINCES

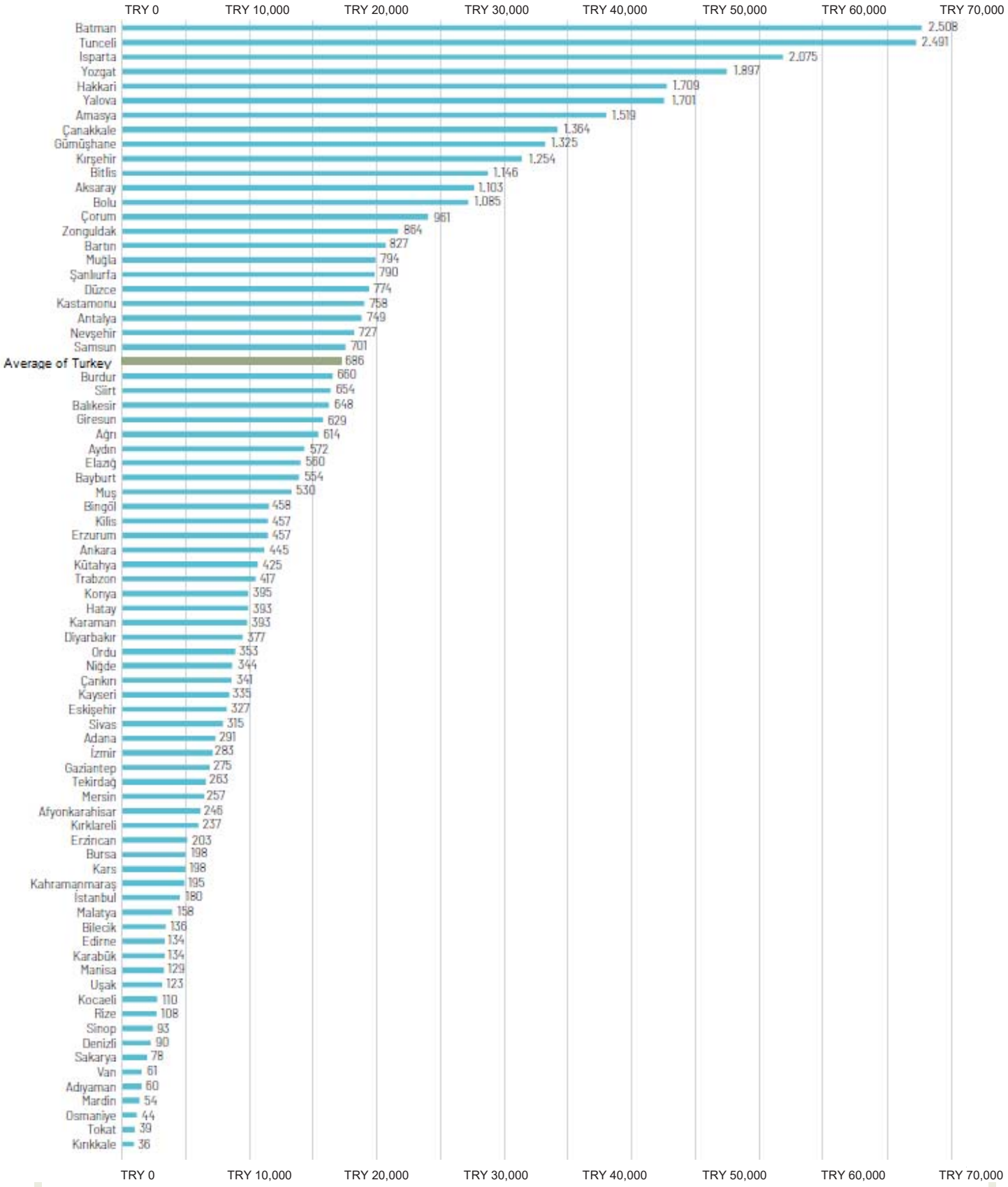


Table 5 shows revolving fund operating revenues by education fields. Revolving fund activities are being conducted in 31 of 54 provinces with vocational and technical education. Income generated by the top three fields with highest revenue, namely accommodation and travel services, furniture and interior design, and food & beverage services, in 2017 is TRY 144,132,501. This revenue constitutes 66.36% of 2017 total income.

There are various areas of activity within the fields taught in vocational and technical education. Table 6 shows the revolving fund revenues by fields.

The highest income is in the field of hotel management, and the revenue obtained in this field is TRY 48,083,913. Activities with the second and third highest revenues are manufacture, maintenance, and repair of desks, tables, lockers, and various furniture (TRY 47,906,230) and food and beverage sales (TRY 47,870,085). There are 14 areas of activity with revenue exceeding TL 1 million.

The distribution of total income by province in the areas of activity, namely hotel management, manufacture, maintenance, and repair of desks, tables, lockers, and various furniture, and food and beverage sales is given in ANNEX-1, ANNEX-2, and ANNEX-3, respectively.

TABLE 5

REVOLVING FUND REVENUE BY EDUCATION FIELDS

Education Areas*	Operating Income	Education Areas*	Operating Income
Accommodation and Travel Services	48,179,922	Animal Breeding and Health	765,001
Furniture and Interior Design	48,082,494	Metallurgy Technology	542,394
Food & Beverage Services	47,870,085	Beauty and Hair Care Services	479,326
Metal Technology	21,986,376	Installation Technology and Air Conditioning	472,842
Child Development and Education	18,067,962	Maritime	415,615
Printing Technology	9,870,669	Shipbuilding	183,398
Chemical Technology	4,326,877	Plastics Technology	129,081
Electrical-Electronics Technology	3,867,766	Public Relations and Organization Services	87,717
Construction Technology	2,313,358	Industrial Automation Technologies	62,464
Handcraft Technology	2,294,091	Radio-Television	52,769
Machine Technology	1,477,924	Graphics and Photography	34,114
Information Technologies	1,367,942	Shoe and Leathercraft Technology	25,714
Agriculture	1,329,915	Jewelry Technology	24,643
Food Technology	1,022,335	Art and Design	9,844
Clothing Manufacturing Technologies	953,074	Entertainment Services	4,980
Motor Vehicle Technology	897,267	**Total**	**217,197,959**

** The table shows areas with revolving fund activities.*

TABLE 6

REVOLVING FUND REVENUE BY ACTIVITIES IN EDUCATION FIELDS

Activity*	Operating Income
Hotel Management	48,083,913
Manufacturing, maintenance and repair of desks, tables, lockers, and various furniture	47,906,230
Food and Beverage Sales	47,870,085
Ordnance material such as desks, tables, frames, lockers	21,101,795
Preschool / kindergarten education services	18,067,962
Various printing and bookbinding works	9,541,562
Video and audio systems, security systems	2,352,749
Sewing Services	2,242,814
Production of cleaning materials (soap, detergent, etc.)	2,041,508
Machinery manufacturing, maintenance & repair, component production	1,350,022
Paint production	1,162,703
Desk production and repair	1,149,963
Paint production Production of cleaning materials (soap, detergent, etc.)	1,103,751
Field crops and fruit growing	1,001,627
Catering, pastry-making	953,100
Experiment set production	691,767
Landscaping	681,531
Sewing of ready-made clothing (dress apron)	600,300
Animal Hospital- Animal Health	531,040
Hair-skin care	479,326
Computer assembly, maintenance, repair	446,709
Informatics, infrastructure, cabling	440,216
Pipe fasteners, clamps	434,940
Desk frame production	402,198
Experiment set production for Engine Sections	356,220
Course Service	352,486
Home textiles (duvet, bed sheets) sewing	316,989
Installation of systems for fresh water, sewage, natural gas, and heating, maintenance of all kinds of equipment failure, hygienic soap system installation	302,737
Vehicle maintenance, repair, control	290,688
TELPA call center	270,465
Wheelchair ramp	251,505
Production of animal and animal products	233,961
Building repair, decoration	230,269
Agriculture & Livestock	229,314

Activity*	Operating Income
Electrical Panel, Compensation and Security System Installation in Schools	214,771
Maintenance-repair	210,774
Vehicle engine and chassis number determination (Engraving)	191,471
Robot contest	190,664
Furniture Processing and Woodworking	173,167
General Mobile authorized service	151,240
Vestel telephone repair	137,398
Building repair, decoration, school renovations	132,291
Various plastic material production	129,081
Notebook and book printing for Ministry	124,998
Mold grinding	123,855
Camellia production	115,708
Manufacturing and repair of PVC doors and windows	102,376
Wooden toy production	96,778
Laundry	96,009
Panel installation production Installation	90,621
Construction of railing, marquise, door, window and roof for school buildings	90,285
Ornamental Plants Production (flower sale)	90,159
Printing of report cards, class books, internship books, brochures, banners	88,631
Organization	87,717
Casting parts production	82,105
Black Tea Production	69,235
Workmanship on State Supply Office Dossiers	65,649
Shipman certificate	63,129
CNC machine	62,464
Brake/shock absorber testing, failure detection	55,047
Photo and video shooting	52,769
Desks, tables	52,298
Various printing works	49,829
Handicrafts and embroidery production	46,482
Wire erosion crafting and milling mold crafting	45,074
Motor cutting works	34,237
School desk production	32,047
Maintenance and Repair of Air Conditioning, Heating Boilers, Natural Gas Systems	29,062
Ironing and sewing of aprons, caps, cloaks	25,690

TABLE 6

REVOLVING FUND REVENUE BY ACTIVITIES IN EDUCATION FIELDS (continued)

Activity*	Operating Income
Desk production	25,349
Badge Set - Necklace	24,643
Graphic printing service	23,106
Student Bunk Beds	22,135
Scrap Waste Sale	19,214
Dry cleaning services	18,915
Automation services (software services)	18,446
Shoe production	17,244
Gediz MEM Maintenance Repair	16,928
Toner filling and printing	14,750
Car engine and chassis number engraving	13,780
Wheelchair parts production	12,839
Desk repair	10,231
Ceramic Vase and pencil printing kindergarten desk	9,844
Production of grafted walnut seedlings, sale of apples	8,815
Manufacture and sale of shoes and boots	8,470
Design photography	8,126
Turning works	5,293

Activity*	Operating Income
Ship Simulator	5,138
Decorative, ornaments	4,795
Sewing	4,102
Crank grinding	3,841
Remaining apron sale	3,806
School equipment	3,321
Engagement, Wedding, Henna Activities	2,728
Door production	2,600
Various knife sharpening and molding services	2,586
Design photography photo shooting	2,295
Pool operation	2,252
Clothing sewing	2,187
Turning and Milling	1,962
Steel bolt milling	1,149
Cup printing	587
Production of hothouses, flowerpots and garden gates	507
Sliding door manufacturing	419

** The table shows areas with revolving fund activities.*

2.6.5 Employment Status of Vocational and Technical Education Graduates

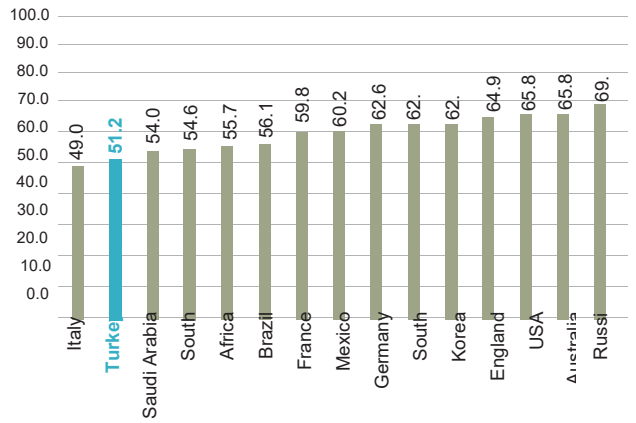
The employment status of the graduates was examined in order to determine the output of the vocational and technical education process and the participation of the human resources created in the work life.

Some nations' total labor force participation rates are shown in Figure 11 based on the *Report on Workforce Qualifications Needed by Industry* published in 2017 by the Directorate General for Science and Technology of the Turkish Ministry of Industry and Technology. The ratio of working-age individuals participated in labor force to working-age population in a country is described as the labor force participation rate. In other words, the labor force participation rate is a measure of the work efficiency of the working-age population in a country. In 2015 the labor force participation rate in Turkey is estimated to be 51.2%, and Turkey has surpassed Italy with this rate. The total labor force participation rates of Turkey, Saudi Arabia, South Africa, Brazil, France, and Mexico was relatively close to each other, between 50% and 60%. The total labor force participation rates of Germany, South Korea, England, USA Australia, Canada, Indonesia, and Russia range from 60% to 69.1%. Turkey's total labor force participation rates by year are shown in Figure 12.

As seen in Figure 12, the labor force participation rate in Turkey has been increasing over the years. The labor force participation rate, which was 50.50% in 2014, rose to 52.00% in 2016 and to 54.00% in 2018. Therefore, the rates of contribution to the labor force and economy of working-age individuals have increased from 2014 to 2018. It is important that labor force participation rates exceed 50% and partially increase during the four years examined.

FIGURE 11

TOTAL LABOR FORCE PARTICIPATION RATES IN SOME COUNTRIES (2015, %)

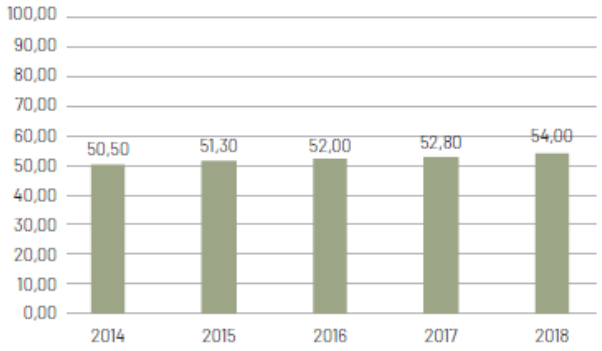


Source: ILO, Labor Statistics

*Extracted from the Report on Workforce Qualifications Needed by Industry published by the Directorate General for Science and Technology of the Turkish Ministry of Industry and Technology.

FIGURE 12

TOTAL LABOR FORCE PARTICIPATION RATES (2014-2018, %)



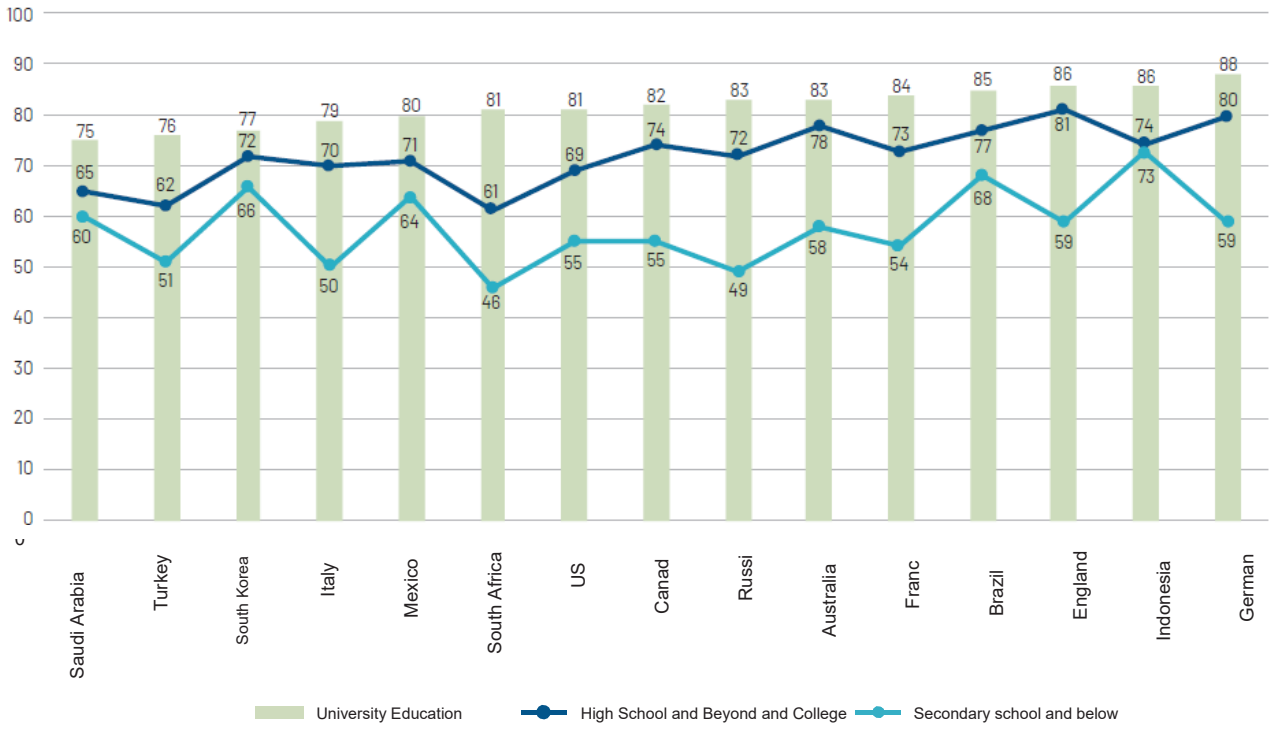
Total Labor Force Participation Rate (%)

Source: TÜİK, Labor Force Participation Rate

*July data was used for 2018.

FIGURE 13

EMPLOYMENT RATES BY EDUCATION LEVEL (AGE 25-64, %)



Source: OECD.stat, Education and Training, 2015

*Extracted from the Report on Workforce Qualifications Needed by Industry published by the Directorate General for Science and Technology of the Turkish Ministry of Industry and Technology.

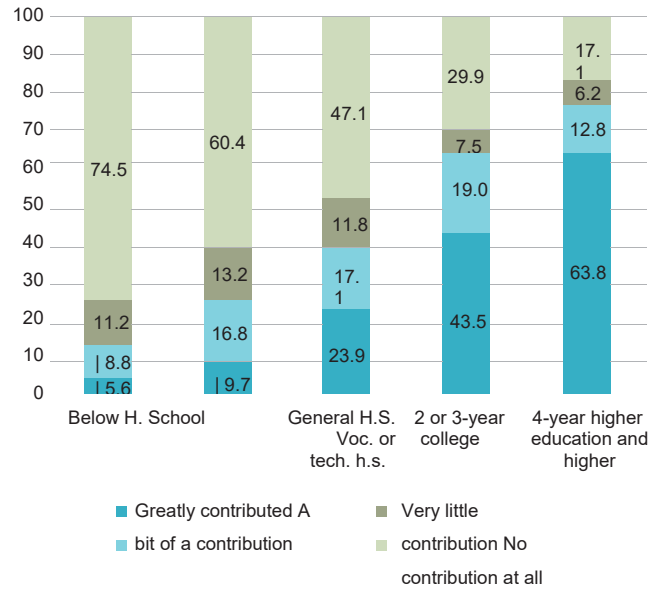
The rates of employment by education level of individuals (age 25-64) are shown in Figure 13 based on the Report on Workforce Qualifications Needed by Industry published by the Turkish Ministry of Industry and Technology. Education levels were categorized "university", "high school and beyond and college", and "secondary school and below" in order to compare individuals' employment rates. Figure 13 shows that the employment rate of university graduates, referring to top level education, varies among countries and the employment rate of university graduates in Turkey is 76%. The employment rates of university graduates in Saudi Arabia, South Korea, Italy, and Mexico are relatively close to the rate in Turkey. As for the employment rates of the graduates of high school and beyond and college, the employment rate in Turkey is only higher than the rate in South Africa. The employment rates of the graduates of high school and beyond and college in Saudi Arabia and Turkey are close to each other.

The two countries with the highest employment rates of graduates of high school and beyond and college are England and Germany. As for the employment rates of graduates of secondary schools or below, the rate in Turkey is higher than the rates in Italy, South Africa, and Russia, and lower than Saudi Arabia, South Korea, Mexico, USA, Canada, Australia, France, Brazil, England, Indonesia, and Germany. There is a relatively high difference between employment rates of university graduates and graduates from other education levels in Turkey. While the difference between the employment rates of university graduates and college graduates is 14% in Turkey, it is 9% in Italy, 11% in France, and

5% in England. As for the difference between the employment rates of high school or college graduates and secondary or primary school graduates, it appears that this difference in Turkey (11%) is relatively low.

FIGURE 14

CONTRIBUTION OF EDUCATION TO WORK RECEIVED BY THE EMPLOYED (AGE 15-34, %)



Source: TÜİK, Transition Of The Young To Labor Market, 2016

*Extracted from the Report on Workforce Qualifications Needed by Industry published by the Directorate General for Science and Technology of the Turkish Ministry of Industry and Technology.

FIGURE 15

EMPLOYMENT RATE BY SECTORS (2016, %)

Source: ILO, Labor Statistics

*Extracted from the Report on Workforce Qualifications Needed by Industry published by the Directorate General for Science and Technology of the Turkish Ministry of Industry and Technology.

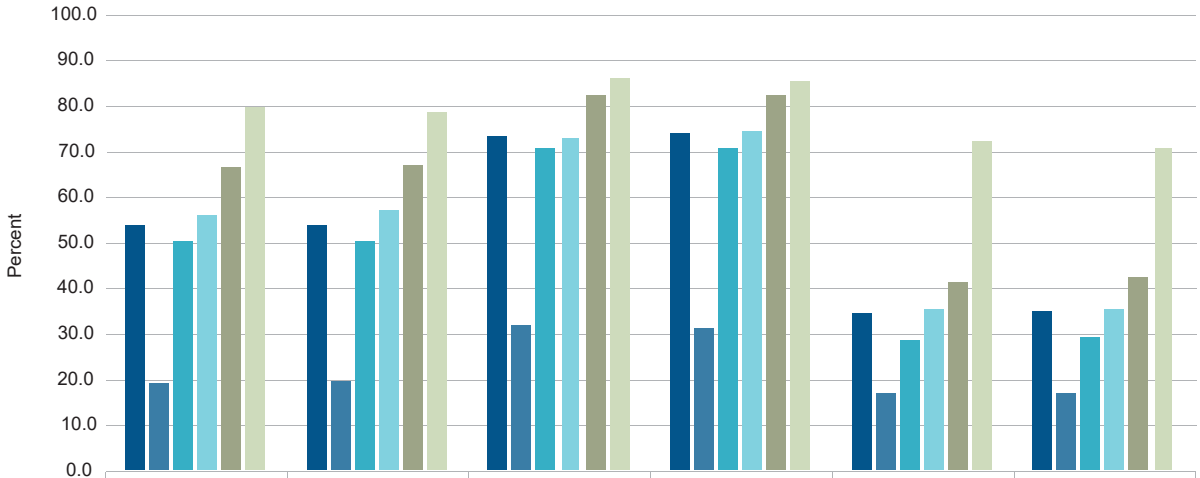
The contribution of education received by employed individuals aged 15-34 is evaluated by a survey a conducted by TÜİK in the Report on Workforce Qualifications Needed by Industry published by the Turkish Ministry of Industry and Technology. Figure 14 shows the contribution of education to work for the employed. Accordingly, the contribution of 4-year higher education or more is high (63.8%). It appears that there is a harmony between the education level of individuals with higher education or more and the requirements of their jobs. The contribution of education to job decreases as education level decreases. According to Graph 14, approximately half of the graduates of vocational or technical high schools (47.1%) think that the education they receive does not contribute to their work life. The fact that the majority of graduates of vocational and technical education work outside of graduation areas is an important element of this perception.

Employment rates by sectors are given in the Report on Workforce Qualifications Needed by Industry published by the Turkish Ministry of Industry and Technology. The 2016 rates of employment in agriculture, industry and services sectors for which vocational and technical education institutions prepare their students are shown in Figure 15 based on this report. When the total employment rates of the sectors are analyzed without gender discrimination, the highest employment rate is observed in the service sector. The total employment rate in the services sector is 53.7%, 26.8% in the industrial sector, and 19,5% in the agricultural sector. When employment rates are analyzed by gender, it is seen that the service sector has the highest employment rate for females and males. However, the second sector, which has a high employment rate after the service sector, differs in males and females. The second sector with the highest employment rate is industry for males with 31.6% and agriculture for females with 28.7%.

In Graph 16, the labor force participation rates of the individuals over 15 years of age in 2017 and 2018 are shown according to their educational status. The labor force participation rate for individuals over 15 years of age was 53.7% in 2017 and 54.0% in 2018. In Graph 16, it is seen that the labor force participation rates increase as the educational attainment of individuals changes from illiterate to higher education. It is noteworthy that the labor force participation rates of vocational and technical high school graduates are higher than general high school graduates. When the labor force participation rates by gender are examined, it is apparent that the labor force participation rate of males is higher than that of females at all levels of education.

FIGURE 16

LABOR FORCE PARTICIPATION RATES BY EDUCATIONAL ATTAINMENT (2018, %)



	Total		Male		Female	
	2017	2018	2017	2018	2017	2018
Total	53.7	54.0	73.5	73.8	34.3	34.7
Illiterate Below High	19.3	19.4	31.6	31.1	16.8	16.9
School	50.0	50.2	70.8	70.9	28.6	29.0
High School	55.8	56.9	72.8	74.4	35.3	35.5
Voc. or technical High	66.5	66.8	82.2	82.3	41.0	42.3
School Higher education	79.8	78.5	85.9	85.2	72.4	70.4

Source: TÜİK, Labor Statistics, July 2018

The most significant difference between male and female labor force participation rates is inherent in individuals with educational attainment below high school. 82.2% of the male vocational and technical education graduates participated in labor force in 2017, and 82.3% in 2018.

41.0% of the female vocational and technical education graduates participated in labor force in 2017, and 42.3% in 2018.

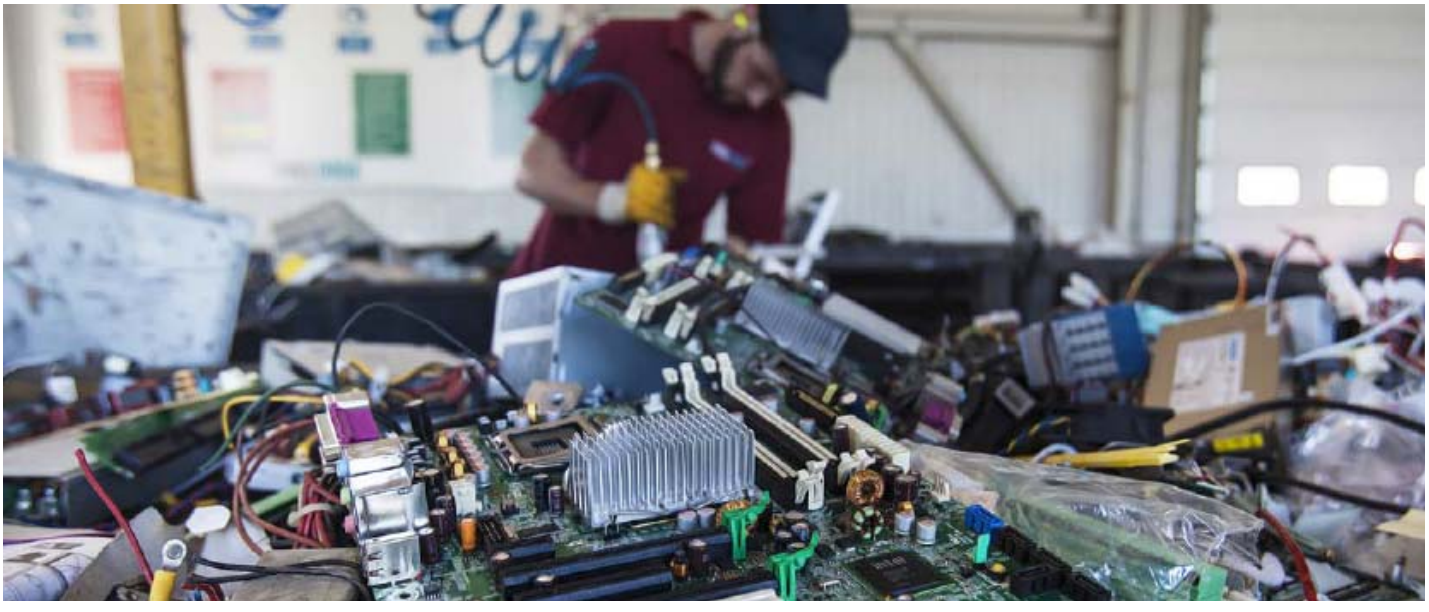
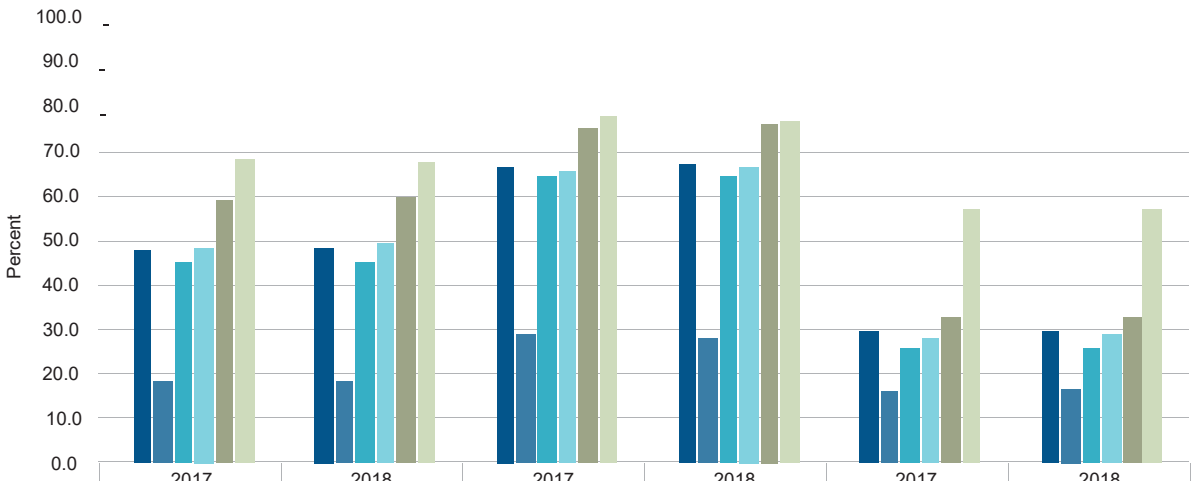


FIGURE 17

EMPLOYMENT RATE BY EDUCATIONAL ATTAINMENT (2018, %)



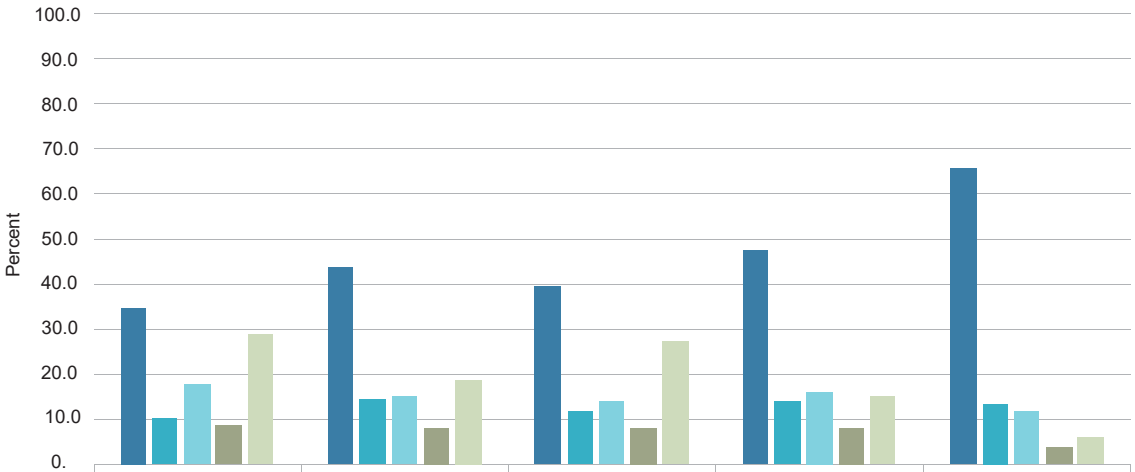
	Total		Male		Female	
	2017	2018	2017	2018	2017	2018
Total	48.0	48.2	67.1	67.1	29.3	29.7
Illiterate Below High	18.4	18.4	29.0	27.8	16.2	16.5
School	45.4	45.4	64.6	64.5	25.7	25.8
High School	48.7	49.7	65.9	66.8	27.8	28.8
Voc. or technical High	59.2	59.6	75.6	76.4	32.7	33.0
School Higher education	68.6	68.0	78.1	77.0	57.2	57.2

Source: TÜİK, Labor Statistics, July 2018

Graph 17 shows the employment rates of individuals according to their educational status in 2017 and 2018. Turkey's employment rate, which was 48% in 2017, increased in 2018 by 0.2% to 48.2%. In harmony with data of Figure 16, the employment rate increases in parallel with the educational attainment. While the employment rate of illiterate is 18.4% in 2018, the employment rate of higher education graduates is 68.0%. The employment rate of vocational and technical high school graduates is higher than the employment rate of general high school graduates. The employment rate of vocational and technical high school graduates increased from 59.2% in 2017 to 59.6% in 2018. The employment rate male vocational and technical high school graduates is relatively close to the rate male higher education graduates in 2017 and 2018. The rate of employment of male higher education graduates is lower in 2018 than in 2017. The rate of employment of male vocational and technical high school graduates has increased in 2018 compared to 2017. From a gender perspective, It is noteworthy that the employment rates of females at all levels of education are lower than that of males.

FIGURE 18

TRANSITION OF THE YOUNG TO LABOR MARKET BY EDUCATIONAL ATTAINMENT (2016, %)



	0-6 months	7-12 months	1-2 years	2-3 years	more than 3 years
Below High School	34.70	3.90	39.60	7.48	65.42
General H.S.	10.40	4.47	11.66	3.70	13.58
Voc. or technical High School	17.57	4.76	13.60	5.99	11.60
2 or 3-year college	8.42	8.23	8.18	7.81	3.52
4-year higher education and higher	28.86	8.64	26.96	5.02	5.84

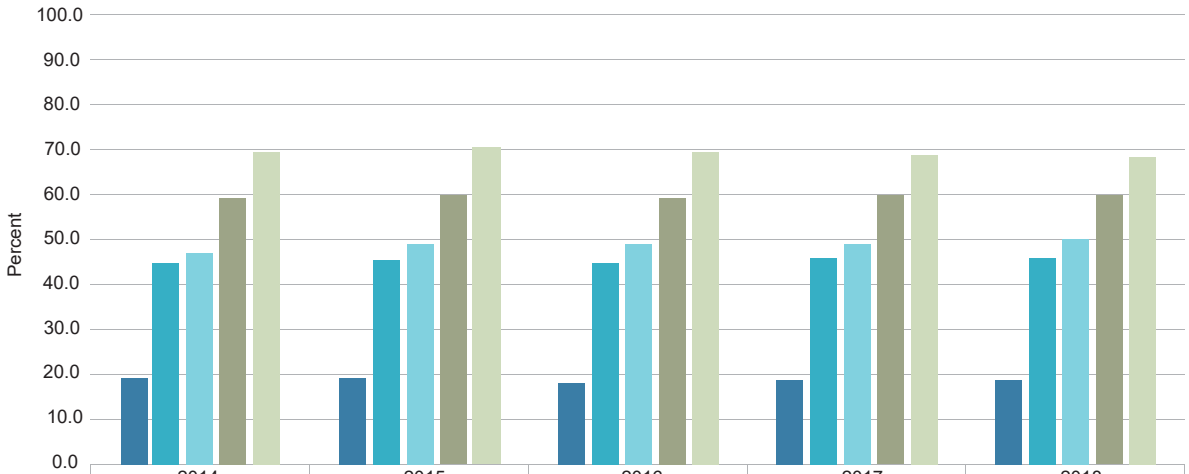
(Period of time longer than three months until first job after education completed/abandoned by individuals who completed at least one school but not employed currently, Quarter II: April-June, 2016, TÜİK)

Period of time longer than three months until first job after education completed/abandoned by individuals (15-34 years of age) who completed at least one school but not employed currently are shown in Figure 18. According to Figure 18, the educational attainment of 34.70% of individuals with the shortest period of time until first job ranging between 0-6 months is below high school, 10.40% is general high school, 17.57% is vocational or technical high school, 8.42% is 2- or 3-year college, and 28.86% is 4-year higher education or more. It is apparent that the educational attainment of the majority (65.42%) of the individuals with a period of time longer than three years until the first job after graduation is below high school. 11.60% of the individuals waiting longer than three

years are vocational or technical high school graduates. As the period of time until the first job gets longer, the proportion of higher education graduates decreases and the proportion of individuals with educational attainment below high school increases.

FIGURE 19

EMPLOYMENT RATES BY YEARS (2014-2018)

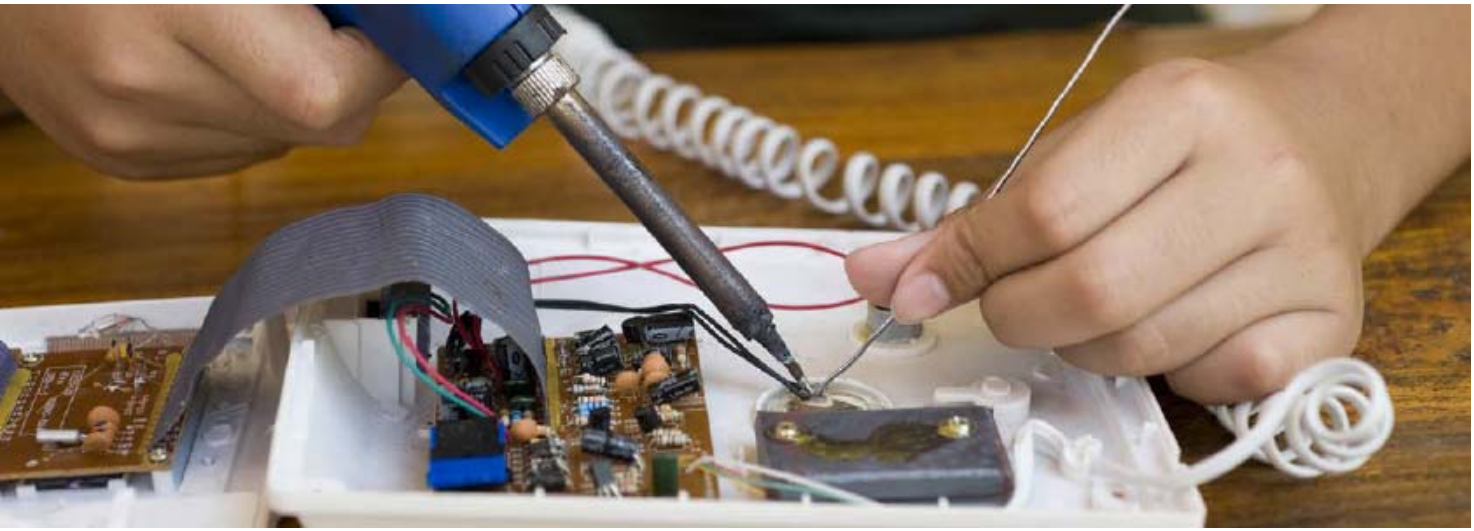


	2014	2015	2016	2017	2018
Illiterate Below High	18.7	18.8	17.6	18.4	18.4
School	44.6	44.9	44.4	45.4	45.4
High School	46.8	48.6	48.5	48.7	49.7
Voc. or technical High School	59.0	59.6	58.9	59.2	59.6
Higher education	69.1	69.9	68.8	68.6	68.0

Source: TÜİK, July data is used for each year.

Graph 19 shows the employment rates educational attainment within the period 2014-2018. In 2018, 68.0% of higher education, 59.6% of vocational or technical high school graduates, 49.7% of high school graduates, 45.4% of individuals with lower educational attainment, and 18.4% of illiterate individuals have been employed. Employment rates by educational attainment in 2018 are similar to those in previous years. It is observed that employment rates of higher education graduates are higher than those of other education levels between 2014 and 2018.

Similarly, in the last five years, vocational or technical high school graduates have received close to higher education graduates in terms of employment rate, and more than half of them have been employed within the relevant period of time. Employment rates of illiterate people within the five-year period of time are close to each other and low.



Proportions of Graduates Employed by Public and Private Sectors

The number of candidates graduated from vocational and technical secondary education institutions between 2008 and 2015 is given in Figure 20, along with the number of candidates working in the private and public sectors.

As shown in Figure 20, the number of those graduated from vocational and technical secondary education between the academic years 2008-2009 and 2014-2015 has significantly increased. Number of graduates more than doubled in the six-year period slowed down only in the period between 2010-2011 and 2012-2013, and reached to 307,225 at end of the year 2014-2015. As for the numbers of employed graduates, it is observed that such graduates are mostly employed in the private sector in the six-year period. However, the number of vocational and technical education graduates employed in the private sector started to decline since 2010-2011 and decreased to 71,632, which is the lowest level within the relevant period, in year 2014-2015. The employment rate of vocational and technical education graduates in the public sector is relatively low in the period examined, and this ratio has decreased to 4.73% in 2014-2015 with the increase in the number of graduates. Despite the increased significance of vocational and technical education and the significantly increased number of graduates thanks to the improved and the facilities provided to the students, it is observed that the employment rates of the graduates in both the private and the public sectors decrease. As Figure 21 suggests, the increase in unemployment rates of high school equivalent vocational school graduates between 2012 and 2014 also confirms that employment opportunities for vocational education graduates have decreased. It is foreseen that the demand for vocational education, which makes a direct contribution to the economy and brings the sector and students together, could reduce, if this employment limitation persists in the long term.

FIGURE 20

NUMBER OF VOCATIONAL AND TECHNICAL EDUCATION GRADUATES AND EMPLOYMENT ATTAINMENT OF GRADUATES (2008-2014)

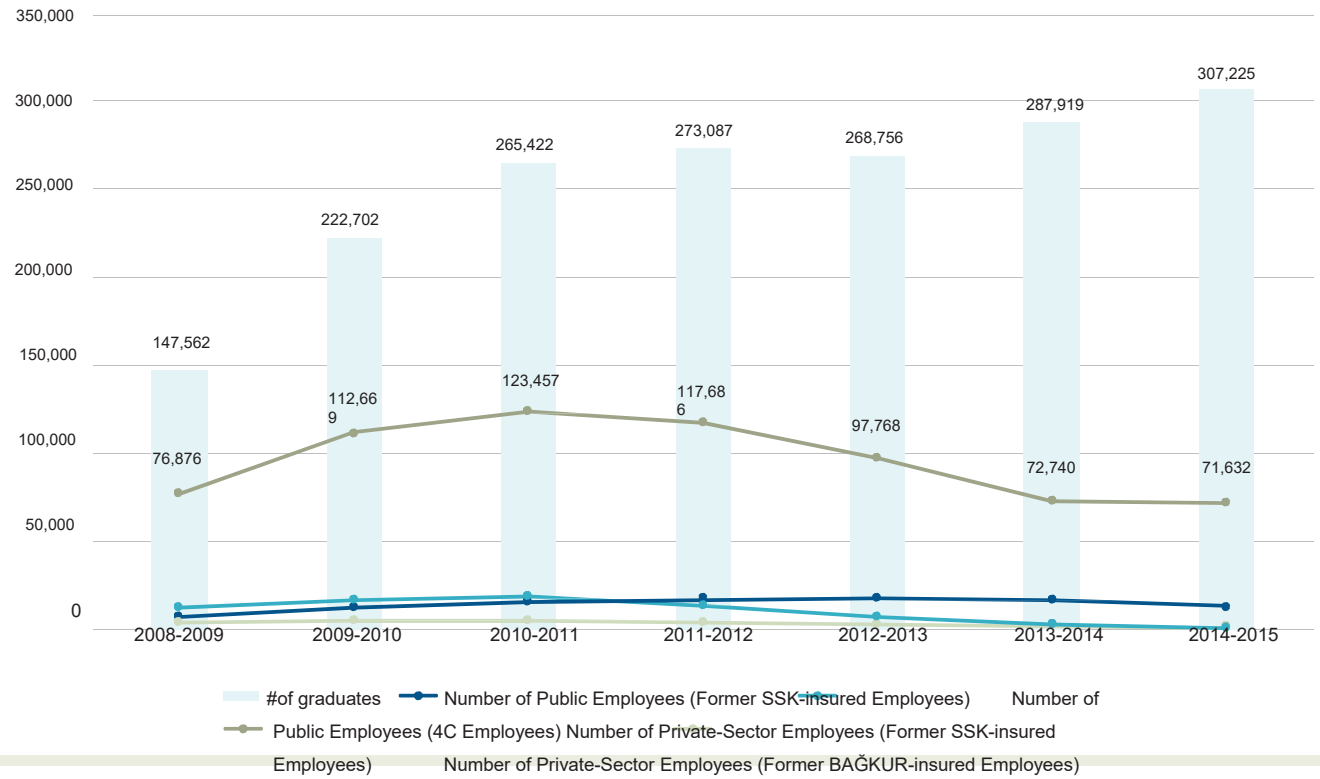
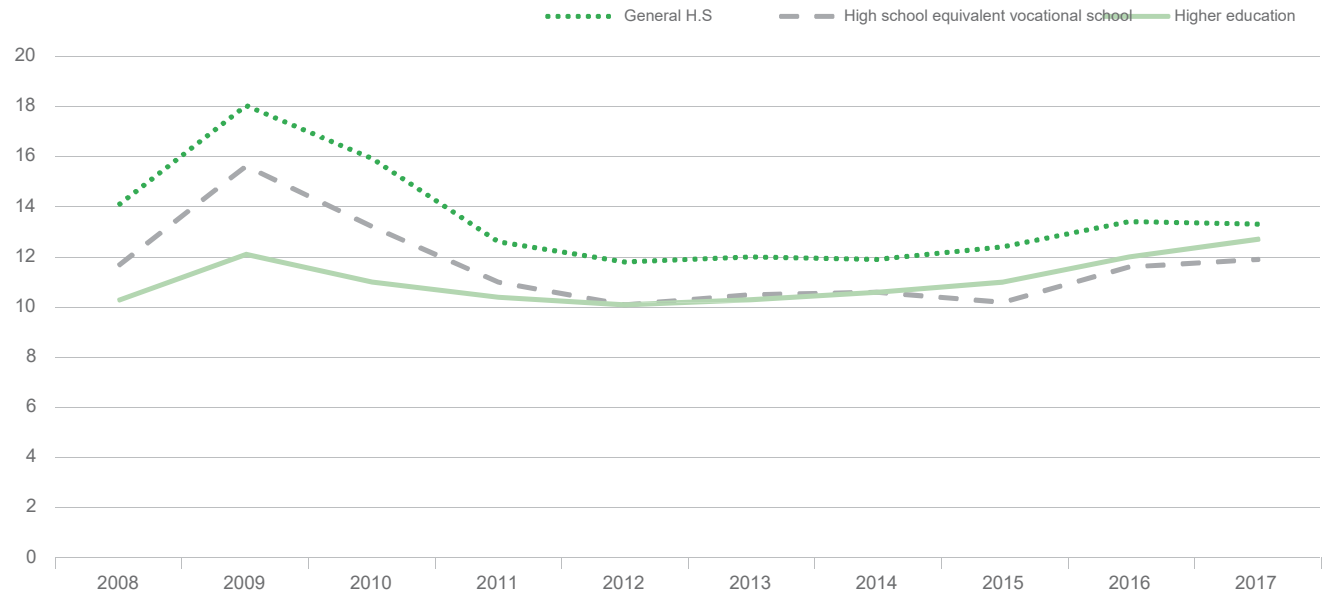


FIGURE 21

CHANGE IN UNEMPLOYMENT RATES OVER THE AGE OF 15 BY EDUCATIONAL ATTAINMENT (2008-2017, %)



Source: Gür, B. S., Çelik, Z. and Yurdakul, S. (2018). Extracted from Higher Education Outlook 2018: Monitoring and Evaluation Report.

Rates of Working In And Outside Graduation Fields

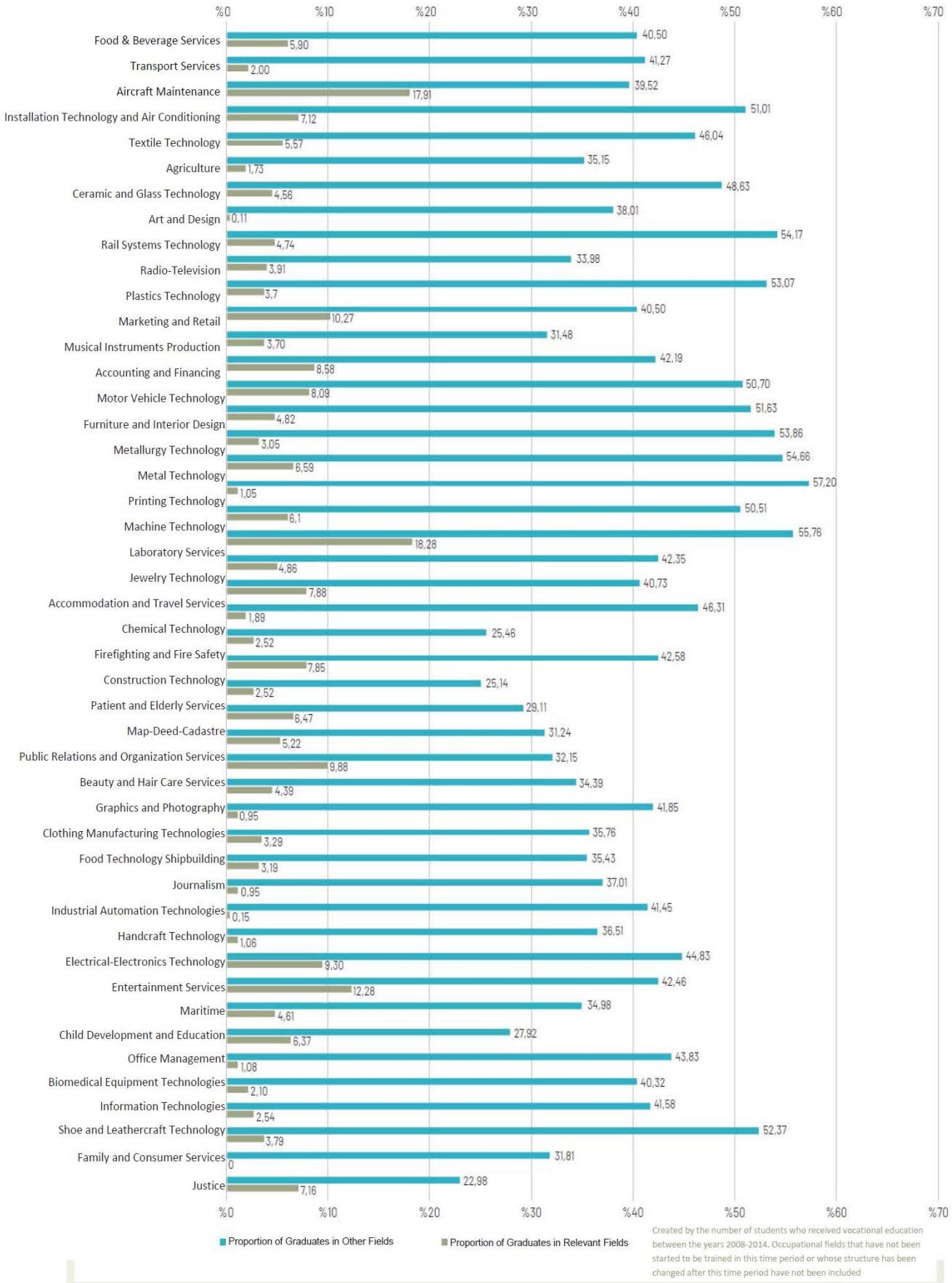
Vocational education graduates' status of employment in and outside their graduation fields between 2008 and 2014 was examined in "Survey on Employment Status of Those Graduated from Vocational and Technical Secondary Education between academic years 2008-2009 and 2014-2015 (based on data from SGK)" conducted by VTEGD. Vocational and technical secondary education graduates' rates of employment in and outside their graduation fields obtained in the survey are given in Figure 9. As suggested by Figure 22, It is noteworthy that the rate of out-of-field work of vocational education graduates in all fields is higher than that of graduation fields.

The highest proportion of graduates working outside the field is in the Printing Technology (57.20%). The areas with proportions of graduates working in their own fields exceeding 10% are limited to Aircraft Maintenance, Marketing and Retail, Laboratory Services, and Entertainment Services. Furthermore, according to Figure 9, the proportion of graduates working in their

graduation fields, which is lower than 5%, indicates that students work in jobs that are not directly related to the education they attained. This situation constitutes an important mismatch between the vocational skills of the graduates and the skills required by their jobs.

FIGURE 22

PROPORTIONS VOCATIONAL EDUCATION GRADUATES WORKING IN AND OUTSIDE THEIR FIELDS (2008-2014, %)



Created by the number of students who received vocational education between the years 2008-2014. Occupational fields that have not been started to be trained in this time period or whose structure has been changed after this time period have not been included

Number of Graduated Employed by Public Organizations

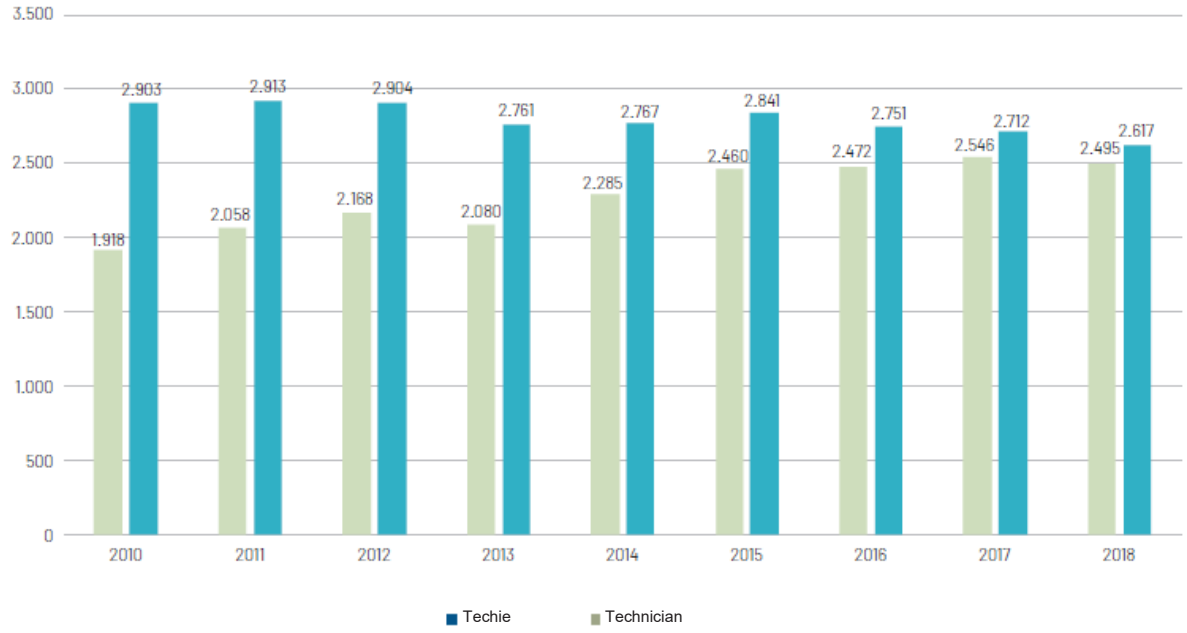
One of the two main sources of employment for vocational and technical education graduates is public institutions. Chart 23 shows the changes in the number of vocational and technical education graduates working in techie and technician positions in public institutions. As seen in Graph 23, the number of technicians employed in the years decreases despite the increasing number of graduates in the period examined.

As for the change in number of technicians employed in the public sector by years, it is observed that the number of employment in 2018 decreased by 11% compared to 2010.

The decrease in the employment rate in the private sector, which is observed in the public sector for technician positions as well, restricts the opportunities for graduates to find a job.

FIGURE 23

NUMBER OF THOSE EMPLOYED AS TECHIES AND TECHNICIANS IN PUBLIC INSTITUTIONS (2010-2018)



2.7 Activities in Vocational and Technical Education as of 2018

Legislative Arrangements

- The Regulation on "Procedures and Principles on Covering Some Part of the Fees of Vocational Educational Students in Businesses from the Unemployment Insurance Fund Pursuant to the Vocational Education Law No. 3308" was signed on 10.02.2017 and entered into force as of the second period of 2016-2017 academic year.
- While only the graduates of the vocational and technical education schools, types of which were specified in the Law No. 3795, had been provided with the title of technician, all the vocational high school graduates have been provided with title of technician by the amendment made by Law No. 6764.
- Diplomas of vocational and technical secondary education and exemption tables for mastership documents have been prepared based on examinations on the national occupational standard and vocational competences for 81 professions included in the scope of MYK Professional Competence Certificate obligation and on the contents of diplomas awarded by vocational and technical education institutions affiliated with the Ministry of National Education and of mastership certificates issued under the Vocational Education Law No. 3308.

Access to and Participation in Education

Quotas and Enrollment

- In the 2016-2017 academic year, a quota of 593,902 places was allocated to 9th grade and 404,521 new enrollments were made. In the 2017-2018 academic year, a quota of 670,023 places was allocated and 435,399 new enrollments were made. In the 2018-2019 academic year, a total quota of 551,440 places, 19,140 of which to the Anatolian Vocational Technical Program (ATO) and 532,300 to the Anatolian Vocational Program (AVP), was allocated within the scope central placement.
- In the 2015-2016 academic year, a quota of 61,733 places was allocated to the Anatolian Technical Program (ATP), where a total of 38,271 was placed.

  In the 2016-2017 academic year, a quota of 52,463 places was allocated to the ATP, where a total of 14,044 was placed.

  In the 2017-2018 academic year, a quota of 40,016 places was allocated to the ATP for 10th grade, where a total of 17,815 was placed.
- While the number of students attending the Vocational Education Center Program (VECP) was 74,203 before December 9, 2016, which is the date of publication of Law No. 6764, it has increased to 139,456 and the number of students have been increased approximately by 65,000. Some of these students requested transfer to formal education, and some of them graduated successfully in February 2018 by passing journeyman and mastership examinations. The number of students attending the Vocational Education Center Program (VECP is 101,036. The number of people who attend the Qualified Instructor training is 7,265.
- In 2017-2018 Academic Year (as of July), the vocational education center program is being implemented in 542 schools in total, 322 of which are independent vocational education centers and 220 are other vocational and technical secondary education institutions.
- Feasibility studies have been completed based on age population density by communicating with Kilis, Gaziantep, Mardin, Hatay, Osmaniye, Şanlıurfa, and Kahramanmaraş, the provinces intensified by Syrian students. 5 MPAHS/Vocational and Technical Anatolian High Schools having healthcare facilities have been opened based on the proposals from these provinces.
- The types of fields, branches and programs have been reviewed by taking into consideration sector and student demands, and 53 new schools, 160 program types in 155 schools, 182 fields in 168 schools, 121 branches in 92, and 9 hostels have been launched as of July 2018.

Transition to Field, Vocational Guidance and Orientation

- In order to guide the placement of 9th-grade students in vocational and technical secondary education to vocational fields of 10th grade according on their abilities, the norm study of General Ability and Knowledge Tests is being carried out in cooperation with İŞKUR and Hacettepe University.
- For 39,346 apprenticeship students attending vocational education centers, which have been taken into the scope of compulsory secondary education by Law No. 6764, and their families have been provided with guidance on career choices, apprenticeship training and professional development.

Schools Offering Special Programs/Projects and Providing Thematic Education

- There are 27 schools offering special programs and projects. 20 of these in 13 provinces provide thematic education at the same time. There are 7 project schools in 6 provinces.

Private Vocational and Technical Education

- In the 2017-2018 academic year, there are 383 private vocational high schools. The total number of students attending these schools is 109,259.
- The number of public and private vocational education schools in organized industrial zones has been increased. As of 08.06.2018, the number of official and private schools is given in Table 7.

TABLE 7

NUMBER OF PUBLIC AND PRIVATE SCHOOLS PROVIDING VOCATIONAL EDUCATION IN ORGANIZED INDUSTRIAL ZONES

Type		# Of Schools	# Of Students*
Public		31	15.786
Private	in OIZ	33	28.076
	outside OIZ	36	10.757
	Total	69	38.833
Grand total		100	54.619

(*) Records if MEİS Query Module & VTEGD and General Directorate for Private Education, 08.06.2018

Promotion of Vocational and Technical Education

- 2 public service announcements have been produced for the promotion of vocational and technical education to the public. These videos have been broadcasted by national and local media thanks to RTÜK regarded these videos as "spot films for public interest"; they have also been published on website of the Ministry.
- A campaign was launched to promote apprenticeship and raise awareness across the country with the Ministry Circular no. 2017/16 on "Promoting Vocational Training, Orientation to Vocational Education, and Guidance".
- In order to introduce vocational and technical education areas to students, parents, the public and the whole public sector, promotional videos for 52 fields have been produced and an area preference portal has been created in 2017 within the framework of cooperation with Ayvansaray University. The field promotional videos are being published in the preference portal (www.alantercihleri.com).
- The website http://meslekîtanitim.meb.gov.tr/, where promotional videos for vocational and technical education and thematic schools and information on vocational and technical education for 8th-grade students and the vocational education centers and the rights earned by students upon graduation are being published, has been created by the VTEGD.

Vocational High Schools Capable of Being a Role Model in Their Fields

- The environment friendly Cezeri Yeşil Technology Vocational and Technical Anatolian High School has started its activities in Etimesgut district of Ankara province since 2017-2018 academic year and had been supplying energy for lightening, heating, etc. from renewable energy sources such as solar and wind sources that are abundant in Turkey.
- SERÇEV Barrier-Free Vocational and Technical Anatolian High School has started its activities in district Çankaya of Ankara as the first one its field in order to enable individuals who need special education to have equal rights and opportunities with everybody else, bring them into society as productive, self-sufficient, and independent individuals, and provide them with education in the same environment with their peers. SERÇEV Barrier-Free Vocational and Technical Anatolian High School received for its services the best project award in 2018 as a result of a competition of projects from 75 countries on 2018 World Cerebral Palsy Day.

Education Practices, Programs, and Education Materials

Programs and Education Materials

- Apprenticeship training has been included in the scope of compulsory education pursuant to the "Law Amending the Decree Law 6764 on Organization and Duties of Ministry of National Education and Some Laws and Decree Laws" dated 02.12.2016.
- In order to train the qualified professional staff in line with the demands from the Milling Machine manufacturing sector,

the commission composed of representatives from the Ministry, universities, and the relevant sector has introduced the branch Milling to the Machine Technology field, and the resulting draft curriculum and the weekly course schedule prepared for the Machine Technology field have been submitted to the Board of Education and Discipline.

- In line with demands from the relevant sector and practitioners, the name of the field Clothing Manufacturing Technology has been changed to Fashion Designed Technology and the branches Women's Clothing Modeling, Men's Clothing Modeling, and Children's Clothing Modeling have been united under a new single sector, Clothing Modeling, as a result of the efforts of the commission set up to raise professional staff needed in the sector.
- The fields and branches applied in apprenticeship education were brought into conformity with the fields and branches applied in vocational and technical secondary education in terms of program in line with the demands from the sector at the 28th meeting of the Vocational Education Council on December 28, 2016.
- At the 29th meeting of the Vocational Education Council on June 6, 2017, the professional branches "metal surface painting and mill machinery manufacture (milling)" were included in the scope of apprenticeship education practices, and apprenticeship education (VECP) practices introduced to 142 branches under 27 areas in total in line with the demands from the sector.
- A curriculum for the field Mining Technology have been developed for the first time in our country, and it has been introduced gradually as from academic year 2017-2018 upon the decision of the Board of Education and Discipline in line with demands from the sector.
- A curriculum for the branch Medical Equipment Manufacturing have been developed to be added as a new branch to the field Machine Technology, and it has been introduced gradually starting from the 9th grade as from academic year 2017-2018 upon the decision of the Board of Education and Discipline in line with demands from the sector.
- In order to meet the need for qualified labor force that will emerge in the forthcoming period in aviation sector in parallel with the development and growth in achieved by Turkey, a curriculum for the professional branch Ground Services under the field Civil Aviation has been prepared and started to be implemented in 8 vocational and technical secondary schools in Ankara, Istanbul, and Rize.
- While preparing the curricula developed/updated, 209 National Occupational Standard at level 4 published in the Official Gazette and introduced by the Vocational Qualifications Authority have been taken as a reference.
- Occupational Health and Safety issues have been reflected in all the branch educational programs applied in vocational and technical secondary schools, under collaboration with the General Directorate for Occupational Health and Safety of the Ministry of Labour and Social Security and the VTEGD.
- Modular "Skill Maps" of the curricula for 199 branches under 54 fields have been prepared and are being published on the website *http://www. megep.meb.gov.tr* .
- In order to raise awareness of the importance of professional ethics in professional life and moral values, a module on Professional Ethics and Ahis has been incorporated into the Professional Development course.
- In 2018, 53 teachers who wanted as a result of an announcement for the first time to work on writing individual learning materials have been provided with relevant training.

Vocational Training at Businesses

- A module for "Vocational Training Practices at Businesses" have been designed in February 2017 and introduced to e-School system for the use of schools in order to ensure that students are equipped with necessary knowledge and skills by improving the quality of training in workplaces and to monitor vocational training at businesses.

Compliance with Industry 4.0

- A number of activities were carried out in 2016 and 2017 in order to raise the workforce demanded by the Industry 4.0 transformation, and a report called "Industry 4.0 Transformation in Vocational and Technical Education" involving the transformation process, activities carried out, and transformation strategies has been prepared.
- As part of the 2018 In-service Training plan for Industry 4.0, it has been planned to provide 1,112 teachers of workshop and laboratory courses with training through 52 activities. In this context, 32 activities were conducted in January-June 2018 period and 658 people were entitled to receive certificates. These activities are composed of courses such as

Computer-aided Production (SolidCAM), Microcontrollers and Embedded Systems 1-2, SCADA (Omron), Microcontrollers and Embedded Systems, Robot Practice Training Course, Computer-aided Design, Design and Production with 3D Printer (AUTODESK FUSION 360).

Boarding and Scholarship

- In academic year 2017-2018, 83,375 students are being accommodated in 765 hostel affiliated with VTEGD (MEİS Query Module, June 8, 2018).
- 13,187 students were provided with scholarships in academic year 2016-2017, and 8,058 students have been provided with scholarships in academic year 2017-2018. (MEİS Query Module, June 8, 2018).
- Successful students with inadequate financial possibilities are provided with special scholarship support within the scope of cooperation protocols with the VTEGD and various institutions and organizations. The number of students benefiting from special scholarship support in this context is 139.

Tracking of Graduates

Employment Status 2016-2017 Graduates

- A report was prepared based on the data obtained from the provinces related to higher education transition and employment status of the graduates of the academic year 2016-2017.

  According to data obtained by reaching the graduates in 2018 February to identify the employment statuses of 332,506 students who had been graduated from vocational and technical secondary education in academic year 2016-2017, of the 332,506 graduates;
  - 62,764 (18.88%) are employed in jobs related to their graduation fields,
  - 59,948 (18.02%) are employed in jobs not related to their graduation fields,
  - 61,492 (18.49%) are attending to higher education,
  - 102,628 (30.87%) are not employed, but preparing for the university admission exam,
  - 34,912 (10.5%) are seeking employment and not intend to study in university,
  - No information about 10,762 (3.24%) graduates could be reached.

e-Graduate Survey Results

- Graduates are tracked by means of questionnaires filled up by graduates and employers through the e-Graduate website (http://emezun.meb.gov.tr). The e-Graduate report for 2017 has been prepared and shared with the relevant persons and institutions. According to this report, 32,734 graduates who have graduated within the last 10 years have filled up graduate questionnaires, and 8,379 business representatives have filled up employer questionnaires in 2017. 74.74% of the employers stated that they were satisfied with the vocational qualifications of the graduates.

SOCIAL EVENTS

International Robot Contest

- 11. International MoNE Robot Contest was held in Konya in 2017 with 3,240 participants and 2,834 robots in 12 categories. Furthermore, 59 foreign contesters with 35 robots from 13 countries attended the contest.

- 12. International MoNE Robot Contest was held on May 9-11, 2018 in Sivas with 4,081 participants and 3,005 robots from 15 countries in 12 categories.

"Vocational High School Students Meet Their Families" Project

- This project has been initiated with the students and teachers of schools and institutions affiliated with the VTEGD to help a certain number of poor and needy people within the school neighborhood/region by providing them with necessary maintenance and repair in their homes, repairing or renewing their unusable or obsolete items, and granting them life-facilitating information, assistance, and material or spiritual amenities that will make them happy within the scope of community service through local resources within a specific plan and project. The achievements in 81 provinces by 18,372 teachers and 61,318 students of 2,238 schools/institutions affiliated with the VTEGD are as follows:
  - 20,285 houses were visited and 68,755 people were helped.
  - 5,870 electronic equipment was repaired.
  - 12,978 repair works procedures carried out.
  - 1,352 NGOs were collaborated with.

Book Reading Event

- A "Book Reading Event" was organized in the summer holiday of 2016-2017 academic year in order to encourage students to read books, give students the habit of reading, make the student see the comprehension level of the book s/he read, improve the student's confidence, and provide students with the consciousness of representing their school in social and cultural environments; where 90,513 students participated in the event.

Events in Collaboration with Stakeholders

- As part of the protocols with various private/public institutions and organizations, some contests and events are organized in schools affiliated with the VTEGD. In this context, a Welding Contest is organized under the cooperation protocol signed by and between the VTEGD and Gedik University.
- The 1st National MAKTEK Golden Compass CNC Machine Tool Design Contest have been organized in Istanbul among the students of vocational and technical secondary education affiliated with VTEGD with the collaboration between Tezmaksan Training Base Association of Tezmaksan Machine Industry and Trade Inc. and the Machine Tools Industrialists and Businessmen Association (TİAD) under the protocol concluded with the same company on 09.10.2017.

Twin School Program

- Under the Twin Vocational Schools program, 13 vocational and technical secondary education schools in Ankara has been identified as twins for 13 vocational and technical education institutions in Şırnak-Cizre, Diyarbakır-Sur, and Mardin-Nusaybin, and the relevant visits were paid and seminars were organized.

EDUCATION SETTINGS

Investment Projects

- The number of projects focused on developing the vocational education and improving the physical settings in 2018 are given by their types in Table 8.

Activities to Launch, Close Down, or Transform Schools, Program Types, Fields/Branches, or Hostels

- Proposals from governorates to launch or close down schools, hostels, program types, or fields/branches are evaluated based on regional characteristics, population density, budget facilities, existing building(s), and student potential. In this context, in the first six months of 2018, affiliated with VTEGD; 53 new schools were launched, 79 schools were transformed by merger, 8 schools were closed down, names of 45 schools were changed, 160 programs types were launched in 155 schools, 149 programs were terminated in 149 schools, 182 branches were launched in 168 schools, 121 branches were launched in 92 schools, 731 branches were closed down in 447 schools, 100 branches were closed down in 38 schools, 9 hostels were opened, and 18 hostels were closed down. Thus, 4,514 program types, 11,712 fields, 21,309 branches, 765 hostels with a capacity of 121,420 were reached in 3,636 schools.
- The process regarding the transfer of some program types, with insufficient number of students and inadequate physical conditions, of Multi-program Anatolian High Schools to the relevant education departments is ongoing. In this context, 12 MPAHSs were transferred to the General Directorate for Secondary Education, whereas 9 MPAHSs were transferred to the General Directorate of Religious Education. Furthermore, 42 VTAHSs were transferred to the General Directorate for Secondary Education in order to meet the quota increase needed in Anatolian high schools.

TABLE 8

NUMBER OF INVESTMENT PROJECTS BY TYPE

Ongoing Projects in 2018 State Investment Program			New Projects in 2018 State Investment		
# of Class	Workshop	Hostel Capacity	# of Class	Workshop	Hostel Capacity
6,298	219	10,780	240	8	800

Equipping

- Necessary appropriation has been allocated by the General Directorate of Support Services to meet the equipment need of thematic schools.
- The data entry of vocational and technical Anatolian high schools to the e-Equipping Module, which was introduced in order to identify the existing equipments in workshops and laboratories of vocational and technical education schools/institutions based on the Circular 19438045 dated 16/11/2017 and the Operating Manual of e-Equipping Tracking Module, has been completed.

Architectural Layouts of Workshops and Laboratories

- In order to improve the educational settings of our schools and ensure the necessary quality for curriculums, The Standard Architectural Layouts and Needs Analyses for the following fields have been updated together with the VTEGD and the Department of Construction and Real Estate: Information Technologies, Office Management, Machine Technology, Metal Technology, Accounting and Financing, Renewable Energy Technologies, Radio-Television, Journalism, Marketing and Retail, Food & Beverage Services, Machine Technology, and Electrical-Electronics Technology.

School Health and Safety

- 6,714 public and private schools/institutions as of July 2018 and 24,198 public and private schools/institutions in total as from the date signing of the protocol have received White Flags.
- 3,710 public and private schools/institutions as of July 2018 and 9,027 public and private schools/institutions in total as from the date signing of the protocol have received Nutrition-Friendly School Certificates.
- In the first period of 2017-2018 academic year, 5,157,424 secondary school and high school students and in the second period 7,196,412 secondary school and high school students have been issued a Health-Related Physical Fitness Report.

QUALITY IMPROVEMENT

Accreditation of Schools

- 29 out of 50 schools with Maritime fields are internationally accredited within the scope of STCW.
- Eskişehir Sabiha Gökçen Vocational and Technical Anatolian High School and Bağcılar Vocational and Technical Anatolian High School have been entitled to obtain "Recognized School Status" within the scope of SHY-147.

Self-Evaluation in Schools

- All vocational and technical education schools / institutions have been included in the self-assessment process in 2016-2017 academic year, during which 162 administrators/teachers at central level and 9,900 administrators/teachers at local level have been provided with quality practices seminars in January 2018 and April-June 2018, respectively, whereas 163 administrators/teachers have been provided with VTE Quality Auditor Courses, for the purpose of strengthening the system.
- Between 07-11 May 2018, 189 schools/institutions have been inspected by VTE quality auditors. Quality indices of these schools/institutions have been determined.

Monitoring and Evaluation of School Performances

- As from the academic year 2017-2018, all schools will be subject to annual performance monitoring and evaluation and they will be provided with school reports within the framework of the themes and indicators/criteria determined in line with the Circular 2017/24. Performance monitoring and evaluation results for 2018 will be announced within the year, and successful schools will be awarded.

Quality Management System Certificate

- The VTEGD has been inspected within the scope of TSE-ISO-EN-9001: 2015 Quality Management System Certification between February 22nd and 24th, 2018 and obtained an ISO-EN-9001: 2015 Quality Management Certificate.

Web Portal of Turkish Vocational Education Council (TMEK)

- The Web Portal of Web Portal of Turkish Vocational Education Council (TMEK) has been created in order to publish, monitor, and evaluate then decisions taken by "Turkish Vocational Education Council" and "Provincial Employment and Vocational Education Councils" established pursuant to Vocational Education Law 3308 as well as "Planning and Cooperation Commission for Provincial Life-Long Learning and Public Education" established pursuant to the Regulation of the Ministry of National Education on Non-formal Educational Institutions, so that they are being published jointly on the websites of VTEGD and DGLLL.

HUMAN RESOURCES

Administrator and Teacher Training

- 147 in-service training activities were carried out in 2017, and a total of 6,945 people, 3,700 of which is workshop and laboratory teachers and 3,245 is administrators have been provided with in-service training.
- 114 in-service training activities have been planned for 2018, and 81 activities have been completed as of July 2018. In total, 2,620 administrators/teachers have been provided with in-service training.

- For the improvement of foreign language proficiency of vocational teachers in 2017, 42 workshop and laboratory teachers in 9 fields (Information Technologies, Biomedical Equipment Technologies, Maritime, Electrical-Electronics Technology, Industrial Automation Technologies, Motor Vehicle Technology, Rail Systems Technology, Food & Beverage Services) were sent a 12-week foreign language course (October 1st - December 23rd, 2017) in London, England for improving their English Language proficiencies.
- For the improvement of foreign language proficiency of vocational teachers in 2018, necessary announcement was made for 21 fields, where the review process of 51 candidates was completed and they were subjected to oral examination. 35 candidates (teachers from 12 different fields) have been found successful as a result of the oral examination, and their visa, etc. procedures have been initiated for their foreign language training.
- The training of designated trainers is being carried by the representative of VTEGD, the Ministry of Labour and Social Security and UNICEF in 10 pilot provinces within the framework of the program "Children's Rights and Business Principles" carried out in cooperation with UNICEF. In this context, a total of 80 administrators and teachers were trained. Furthermore, a total of 400 teachers, 20 of whom are counseling teachers of secondary schools and another 20 are coordinating assistant administrators of vocational education centers from 10 provinces , have been planned to be trained, and the training of 320 teachers have already been completed.
- In order to enhance the specific field proficiencies of 62 teachers teaching aircraft maintenance in schools affiliated with VTEGD, "Introductory Flight Trainings" was conducted between May 02nd and 12th, 2017 by THK Flight Academy in Etimesgut of Ankara for measuring air feeling.

FINANCING

Government Incentives for Private Vocational High Schools

- Private vocational high schools opened within Organized Industrial Zone (OIZs) have been provided with government incentives for 21 fields in 2017-2018 academic year.
- As for the private vocational high schools opened outside OIZs, government incentive process have been initiated in 27 fields.
- Currently, 69 private Vocational and Technical Anatolian High Schools benefit from incentives and 38,833 students receive education at these schools.

Government Incentives to Businesses for Skills Training and Internship

- It has been ensured that a certain portion of the minimum wage paid to students by the businesses which are obliged to offer the skills training and internship is reimbursed.
- Government incentives has been furnished for 182,939 students per month in average within the scope of skills training in businesses. Since February 2017, the starting date of the incentive program, until June 2018, government incentives have been furnished to businesses for 3,109,971 students.

PROJECTS and COOPERATION WITH STAKEHOLDERS

Protocols

- 77 protocols were implemented with a total of 103 institutions and organizations in 2017. VTEGD now cooperates with 98 institutions/organizations and 88 protocols are in force. (As of July 2018, the cooperation protocols with 21 institutions/organizations have been expired. Negotiations are underway to re-cooperate with these institutions/organizations. 22 new protocols have come into force between January-July 2018.)
- Training programs were furnished to students, tutors and sector employees in the following 26 countries within the scope of the cooperation protocol between MoNE and TİKA: Afghanistan, Azerbaijan, Belize, Republic of Bosnia and Herzegovina, Djibouti, Chad, Palestine, Republic of Guinea, Republic of Cameroon, Republic of Kazakhstan, Kyrgyzstan, Republic of Madagascar, Mongolia, Republic of Moldova, Republic of Mozambique, Republic of Uzbekistan, Islamic Republic of Pakistan, Republic of Senegal, Republic of Sudan, Republic of Tajikistan, United Republic of Tanzania, Republic of Togo, Republic of Turkmenistan, Hashemite Kingdom of Jordan, Republic of Yemen, and Republic of Zambia.

  The fields for which trainings were provided are as follows: Information Technologies, Electrical-Electronics Technology, Handcraft, Industrial Automation Technologies, Clothing Manufacturing Textile Technology,

Graphics and Photography, Beauty and Hair Care Services, Construction Technology, Accommodation and Travel Services, Jewelry Technology, Machine Technology, Metal Technology, Furniture and Interior Design, Motor Vehicle Technology, Ceramic and Glass Technology, Agriculture, Textile Technology, Installation Technology and Air Conditioning, and Food & Beverage Services. 4,195 people in total have been provided with training in 19 fields by 276 teachers until today.

- Thanks to the cooperation protocol with KOSGEB, every student who has taken the vocational development course in a vocational high school and graduated from that vocational high school is regarded as being a holder of the "Applied Entrepreneurship Training Certificate" issued by KOSGEB. In this context, grant and interest-free credit support was provided to the vocational high school graduates.
- In the scope of the protocol with Turkish Employers Association of Metal Industries (MESS), 102 students have been provided with scholarships for 10 months in 2016-2017 academic year (to be continued for 3 years). As for 2017-2018 academic year, 100 students will have been provided with scholarships for 10 months (to be continued for 3 years). As a result 202 students in total have been provided with scholarships in 2017-2018 academic year.
- Moreover, children of the personnel employed by Turkish Employers Association of Metal Industries (MESS) studying in vocational high schools have also been provided with scholarships. MESS has so far provided scholarships to a total of 3,035 vocational high school students.
- A Vocational Training Cooperation Protocol has been signed and entered into effect by and between Turkish Ministry of National Education and Kepkep Communication Systems Manufacturing Industry and Trade Inc. The laboratory and workshop equipment of 1 school and a training program for its teachers will be provided and 3 students will be scholarships throughout the protocol.
- A Training Cooperation Protocol has been signed and entered into effect by and between Turkish Ministry of National Education and the Confederation of All Cooks and Pastry (TAŞKAPON) Teacher qualifications will be increased in the field of Food and Beverage Services throughout the Protocol.
- A Cooperation Protocol has been signed and entered into effect by and between Turkish Ministry of National Education and the Sign Association of Turkey (ARED). In the course of the protocol, 4 laboratories in the field of Metal Technology have been provided with workshop laboratory support and workshop laboratories support will be provided to selected schools in 11 provinces. Field qualifications of vocational course teachers and students will be improved within the scope of the protocol.
- A Vocational Training Cooperation Protocol has been signed and entered into effect by and between Turkish Ministry of National Education and the Elevator Industrialists Federation (ASFED). In the course of the protocol, 2 laboratories in the field of Electronics Technology will be provided with workshop laboratory support. Field qualifications of vocational course teachers and students will be improved and it will be insured that students are employed in some businesses affiliated with the Federation.
- A Cooperation Protocol has been signed and entered into effect by and between Turkish Ministry of National Education and the Association for Operators of Personnel Lifting and Conveying (PLATFORMDER). 12 students will be provided every academic year with scholarships in Motor Vehicle Technology field and workshop-laboratory support will be given throughout the protocol. Field qualifications of vocational course teachers and students will be improved within the scope of the protocol.
- A Vocational Training Cooperation Protocol has been signed and entered into effect by and between Turkish Ministry of National Education and the General Directorate of State Railways affiliated with the Ministry of Transport and Infrastructure. Workshop-laboratory support will be provided and field qualifications of vocational course teachers and students will be improved within the scope of the protocol.
- A Vocational Training Cooperation Protocol has been signed and entered into effect by and between Turkish Ministry of National Education and the NETCAD Software Inc. Throughout the protocol, field qualifications of vocational course teachers and students of Vocational and Technical Anatolian High Schools will be improved in the fields Map-Deed-Cadastre, Construction Technology, and Mining Technology, and the education materials they use while lecturing will be prepared. Netcad software will be installed free-of-charge in computer laboratories of 21 pilot schools within the scope of the protocol. Furthermore, sectoral developments will be introduced to educational settings with a new innovative approach by free-of-charge online training support to students through *portal.netcad.com.tr*, and training of qualified technical workforce needed in map, construction and mining sectors will be supported.
- A Vocational Training Cooperation Protocol has been signed and entered into effect by and between Turkish Ministry of National Education and the SMC Turkish Automation Trade and Industry Inc.

Workshop-laboratory support will be provided and field qualifications of vocational course teachers and students will be improved within the scope of the protocol.

- A School Contest and Vocational Training Cooperation Protocol has been signed and entered into effect by and between Turkish Ministry of National Education and the Ministry of Energy and Natural Resources and TANAP Natural Gas Transmission Inc. The buildings of 1 school in Mining Technology field, a hostel and an indoor sports hall will be built in Sivas Province within the scope protocol.
- A School Contest and Vocational Training Cooperation Protocol has been signed and entered into effect by and between Turkish Ministry of National Education and the Ministry of Energy and Natural Resources and Electricity Distribution Companies affiliated with Enerjisa Energy Inc. and Hacı Ömer Sabancı Foundation. The buildings of 4 school in total, a hostel and an indoor sports hall will be built in Sivas Province within the scope protocol. (1 VTAHS in the field Renewable Energy Technologies and hostel building at the European side of Istanbul, 1 VTAHS in the field Renewable Energy Technologies and hostel building in Hatay, 1 VTAHS in the field Mining Energy Technology and hostel building in Trabzon, 1 VTAHS in the field Mining Energy Technology and hostel building Zonguldak)
- A School Contest and Vocational Training Cooperation Protocol has been signed and entered into effect by and between Turkish Ministry of National Education and the Ministry of Energy and Natural Resources and Isıder Energy Production Marketing Import and Export Inc. The buildings of 1 school in Mining Technology field, a hostel and an indoor sports hall will be built in Afşin District of Kahramanmaraş Province within the scope protocol.
- A School Contest and Vocational Training Cooperation Protocol has been signed and entered into effect by and between Turkish Ministry of National Education and the Ministry of Energy and Natural Resources and Nurol Holding Inc. The buildings of 4 school in total, a hostel and an indoor sports hall will be built in Sivas Province within the scope protocol.
- A Training Cooperation Protocol has been signed and entered into effect by and between Turkish Ministry of National Education and General Directorate for Life-Long Learning and Welding Technique Industry and Trade Inc. Workshop-laboratory support will be provided and field qualifications of vocational course teachers and students will be improved within the scope of the protocol.
- A Vocational Training Cooperation Protocol has been signed and entered into effect by and between the Vocational and Technical Education General Directorate of Turkish Ministry of National Education and the Gaziantep Chamber of Industry. On-the-job training, skills training, internships, and workshop-laboratory support will be provided in Vocational Training Centers and field qualifications of vocational course teachers and students will be improved within the scope of the protocol.
- A Cooperation Protocol has been signed and entered into effect by and between the Vocational and Technical Education General Directorate of Turkish Ministry of National Education and the Akdeniz Electricity Distribution Inc., Çamlıbel Electricity Distribution Inc. and Boğaziçi Electricity Distribution Inc. Workshops will be built from scratch in 3 schools in the field High Voltage Systems within the scope of the protocol. A total of 500 students will be provided with scholarships in each academic year, and these students will be employed in the sector.
- A Training Cooperation Protocol has been signed and entered into effect by and between Turkish Ministry of National Education and the General Directorate of Dr. (H.C.) İbrahim Bodur Kaleseramik Training, Health and Social Assistance Foundation. On-the-job training, skills training, internships, employment, and workshop-laboratory support will be provided in Vocational Training Centers and field qualifications of vocational course teachers and students will be improved within the scope of the protocol.
- A Vocational Training Cooperation Protocol has been signed and entered into effect by and between the Vocational and Technical Education General Directorate of Turkish Ministry of National Education and Energy Markets Operating Inc. Support of "Renewable Energy-Solar and Wind Theme Hybrid Training Sets" under the field Renewable Energy Technologies will be provided for 5 schools and field qualifications of vocational course teachers and students will be improved within the scope of the protocol.
- A Vocational Training Cooperation Protocol has been signed and entered into effect by and between the Vocational and Technical Education General Directorate and Grundfos Pump Industry and Trade Ltd. On-the-job training, skills training, internships, and employment will be provided in Vocational Training Centers and field qualifications of vocational course teachers and students will be improved within the scope of the protocol. A total of 10 students will be awarded a scholarship each year.
- A Technology Cooperation Protocol on Computer Design and Production Training has been signed and entered into effect by and between the Vocational and Technical Education General Directorate of the Ministry of National Education and B.S.A. Machine Construction and Computer Trade Ltd.

A computer-aided design contest will be organized within the scope of the protocol. Field qualifications of vocational course teachers and students will be improved.

- A Training Protocol on "Developing a STEM Education Approach and Raise Industry 4.0 Awareness in Vocational and Technical Anatolian High Schools" has been signed and entered into effect by and between the Vocational and Technical Education General Directorate of Turkish Ministry of National Education and Turkish Industry and Business Association (TÜSİAD). The "Project for Strengthening Vocational and Technical Anatolian High Schools with STEM Education and Industry 4.0 Components" in Istanbul and Kocaeli within the scope of the Project. Under this project: the competences of physics, chemistry, biology, mathematics teachers and technical field teachers will be increased by means of STEM Education and Industry 4.0 components; a project-based contest involving STEM Training and Industry 4.0 components will be held; teachers of 4 Vocational and Technical Anatolian High Schools determined as a result of the contest will be provided with online and/or local face-to-face trainings/courses/seminars in Istanbul and Kocaeli within the scope of theoretical and practical training activities in order to support the STEM education and the learning and implementation of the technology kit during the digital transformation and Industry 4.0 process; and raise the awareness and competences of the teachers and students of the schools included in the scope of the project by means of STEM education and Industry 4.0 components.
- A Training Cooperation Protocol has been signed and entered into effect by and between Turkish Ministry of National Education and Yıldırım Electronics Trade and Industry Inc. Throughout the protocol, Electricity-Electronics Technology qualifications of vocational course teachers and students of the Vocational and Technical Anatolian High Schools will be improved, on-the-job training programs will be applied, skills training will be offered at businesses, and students will be provided with practicing materials.

Cooperation with R&D Centers

- As part of matching the Vocational and Technical Anatolian High Schools and the R&D Centers affiliated with the Ministry of Science, Industry and Technology in accordance with their fields of activity and ensuring the common use of R&D environments, 36 and 125 protocols have been concluded by and between the R&D enters affiliated with the Ministry of Science, Industry and Technology and the Vocational and Technical Anatolian High Schools in accordance with their fields of activity in 2017 and 2018, respectively.

Cooperation with Stakeholders

- As part of the protocols with stakeholders, 45 in-service training programs have been held and 812 workshop and laboratory teachers have been provided with training. As part of the protocol 361 workshop and laboratory teachers have been provided with on-the-job training in 21 activities.
- The School Projection Project has been initiated on the principle that all vocational and technical secondary education institutions should have a protocol with at least one sector entity in order to strengthen the school-sector cooperation and encourage businesses to protect the schools within the same location and cooperate with them. 839 such protocols have been signed in 415 schools so far.

General Information on Projects

8 projects implemented by the VTEGD between 2011 and 2017 has been completed. 11 projects are being carried out as of 2018. Some indicators regarding the projects and protocols carried out in 2017 and 2018 are given in Table 9.

Completed Projects

- *The Project KEP-1 for Improving the Schooling Rate of Girls in particular*
  - » 3 spot films on access to education have been produced. 1 spot film for the promotion of Line 147 has been produced and broadcasted. 1 more spot film related to vocational education has been produced and broadcasted. 1 short film about the success stories has been produced and broadcasted through social media.
  - » 198 teacher trainers have been trained, and they trained 1,470 teachers and 450 university students.
  - » The Student Support Program has been implemented in 160 schools in 16 pilot provinces.

TABLE 9

TARGETED AND ACTUAL INDICATORS IN CURRENT PROJECTS AND PROTOCOLS

		2017 Target	2017 Actual	2018 Actual
(*)	Number of projects prepared	3	3	3
(*)	Number of projects being executed	8	10	11
(*)	Number of projects completed	1	1	-
(*)	Number of publications	1	1	4
(**)	Number of institutions/organizations cooperated	20	27	29
(**)	Number or cooperation protocols	20	26	22
(**)	Number of education materials, protocols covering module/curriculum update	-	5	-
(**)	Number of students receiving scholarship	1,500	2,946	4,850
(**)	Number of in-service training	34	29	42
(**)	Workshop-laboratory teachers attended to in-service training	850	959	771
(**)	Number of on-the-job training	18	22	19
(**)	Workshop-laboratory teachers attended to on-the-job training	350	423	327
(*)	Number of courses, seminars, etc. organized for groups requiring specific policies	250	307	162
(*)	Number of participants in courses, seminars, etc. organized for groups requiring specific policies	3,000	5,118	2,696
(***)	Number of all administrators, students, teachers, trainees, parents, etc.	7,500,000	14,897,822	702,082
(***)	Number of workshops, laboratories equipped	46	56	80
(***)	Number of buildings (schools, hostels, vocational education centers)	2	2	-
(**)	Number of students received internship/skills training	100	517	1,574
(**)	Number of students employed	15	85	188

(*) Data of projects.
(**) Data of protocols.
(***) Common data of projects and protocols.

- *The Project METEK-1 for Improving the Quality of Vocational and Technical Education in Turkey*
  - » Self-Assessment Guidelines, Reference and Guidance Guidelines of Quality Management Standards have been developed. A Quality Development Strategy and Action Plan has been in parallel with the 2014-2018 Vocational and Technical Education Strategy and Action Plan.
  - » Framework teaching programs based on learning attainments at the fourth level in 13 fields and the fifth level in 16 fields in the sectors justice, maritime, healthcare, and agriculture have been completed by a work group including all relevant social partners created for curriculum development purposes.
  - » Equipments of workshops/laboratories in 20 schools have been procured as part of the project.
- *The Project KEP-2 for Improving the School Attendance Rate of Girls in particular*
  - » 3 TV spot films have been produced as part of the project.
  - » Provincial visiting teams visited schools and families. As a result of these visits, 9,424 families and 12,977 students were reached.
  - » Parent information meetings were completed with 2,790 participants.
  - » As a result of parent and student interviews during the project, school attendance of 3,319 students have been achieved.

- Equipments of the hostel buildings of 13 boarding schools in 8 provinces have been procured.

- *Lifelong Skills Training Project - LTSP*
  - 258 vocational course teachers working for 12 fields in schools affiliated with the VTEGD in 22 provinces have undergone 4-week on-the-job training in Germany and Italy in sectors suitable for their respective fields.

- *The Project EQAVET for Improving the Quality of Workplace Teachers*
  - Self-assessment in workplace-based training has been made fit to be done online through the web portal.
  - Every vocational and technical education school/institution has been registered to the portal to do its self-assessment regarding workplace-based training in 2017-2018 academic year.

- *Project-1 on Dissemination of Industrial Automation Technology to Central Asian and Middle East Countries*
  - A total of 138 people participated in the 15 courses organized in the field of industrial automation technologies.

- *Skills 10 Project for Specialized Occupation Training Centers (SVTC)*
  - According to the protocol, training providers have been required the employment of 50% their graduates. 70% of 210,796 graduates, that is 137,000 people were employed thanks to the project
    carried out between 2010 and 2016.

- *Improving the Vocational Skills Project MESGEP-1*
  - 18,153 people applied to 1,005 vocational courses organized for disadvantaged groups from 2013 to December 31, 2016 in 35 provinces as part of the project, and 11,366 people became entitled to certificate.

Ongoing Projects

- *Vocational Education and Training Mobility Database and Guidelines Project (Vetexpress)*

  As part of the project:
  - 3 TPMs (Transnational Project Meeting) have been held with 56 participants.
  - ECVET guidelines have been prepared in 4 languages separately for students, teachers, parents, and schools including but not limited to sample applications.
  - VETExpress Online Platform has been made ready for pilot implementation.
  - Common Agreement Templates for Credit Transfer have been prepared and published.
  - International ECVET conference was held with 140 participants.
  - 1 training program was held for 13 key personnel as part of Joint Personnel Training.

- *Project of Structural Methods for Competency Management in Metal Sector (Smart Comet)*

  As part of the project:
  - 3 review visits were held with the participation of 36 people in total in order to develop a competency management framework and a Information technology model based on ECVET tools by analyzing the various competence management approaches and tools available.

- *Project for E-Learning-Based Modular Training Program and Career Guidance for Furniture Upholstery Vocational Competences*

  As part of the project:
  - The contract of the project to be executed between 01/12/2016 and 31/12/2018 has been concluded.
  - The project was launched in Kayseri on January 17-18.
  - The project logo has been designed.
  - A project management meeting was held in

England on May 23, 2017. The task distribution of the project partners was made during the meeting.

» Three field teachers have been assigned to Kayseri for designing the modular framework program and the module in line with the 5th Level competences determined by the Kayseri Vocational College of Erciyes University.

- *Project for Vocational and Technical Education and the Labor Market Services for Syrian Refugees in Turkey and Host Communities (GIZ)*

As part of the project:

» Necessary equipments for 10 schools in Ankara, Bursa and Gaziantep have been supplied.

» 144 teachers and administrators from pilot schools included in the Project have been provided with training on the socio-economic adaptation of Syrians under temporary protection.

- *Project for Social and Economic Adaptation through Vocational Training (KFW)*

As part of the project:

» An implementation consultant will be recruited for technical support to project implementation.

- *Project-2 on Dissemination of Industrial Automation Technologies to Central Asian and Middle East Countries*

As part of the project:

» Equipment needs of schools have been determined.

» Training needs of teachers have been determined.

» Potential organizations to provide teacher training have been identified.

» Necessary approval is expected to carry out the activities.

- *Improving the Vocational Skills Project (MESGEP-2)*

Improving the Vocational Skills Project (MESGEP-1) implemented in 35 provinces have been disseminated to 81 provinces under the name Improving the Vocational Skills Project (MESGEP-2) as of January 2017. One coordinating school has been identified in each province for the implementation of the project to be carried out in 2017-2019 in 81 provinces.

As part of the project:

» 2,092 people have participated in 125 vocational training in total as of January-June 2018.

» At the end of the project, it is aimed to provide profession to 15,000 people in total, who are unemployed, disadvantaged (widows and orphans, who have been released or not been released from prisons, women who are victims of violence, housewives, groups who have been unable to access education due to their disabilities, people who have migrated for security reasons, individuals who have not had access to education, who do not have an occupational skill or who want to change their profession), or want to change their professions.

- *Project for Education on Renewable Energy Resources and Technologies in Vocational and Technical Education*

As part of the project:

» Equipment needs of schools have been determined.

» Necessary approval is expected to supply the necessary equipments.

- *Project for Development of Vocational Education in Cameroon*

As part of the project:

It was published in the Official Gazette dated June 27, 2018, and entered into force by the General Directorate of Laws and Decisions of the Prime Ministry on 26.06.2018.

As part of the project until today:

» Conceptual design drawings are being prepared by the General Directorate of Construction and Real Estate for the vocational training centre to be constructed in Cameroon.

» The process for land allocation in YAOUNDE is being carried out by the Cameroon Government along with TİKA.

» The Project Implementation Protocol was translated and sent to the Cameroon Government.

» The project has been accepted by the Government of Cameroon.

» The project implementation protocol was signed and entered into force on 21 February 2018.

» Preparations for project activities are ongoing.

- *Project for Schooling of Girls (KEP)*

  As part of the project:

  - Advantages of vocational education and vocational guidance, awareness of opportunities provided by vocational education.
  - For the Project for Schooling of Girls which has been assigned to coordination by VTEGD as of March 2018; absenteeism data for academic year 2017-2018 based on provinces and gender across Turkey has been required by the Strategy Development Department.
  - Considering the absenteeism data for academic year 2017-2018 and the schooling rates for academic year 2016-2017 of the Strategy Development Department, the provinces with lower schooling rates have been selected.
  - The Project for Schooling of Girls have been started to be carried out under the coordination of VTEGD upon the Ministry's approval 7255917 dated 10.04.2018.
  - In order to bring the students, who have problems in school attendance and who are at risk of leaving the school, to education, an activity and budget table has been sent to pilot provinces and in line with the Ministries approval and they have been required to plan their project activities and submit to the VTEGD.
  - Activity and budget tables coming from pilot provinces along with official letters have been reviewed by the commission established by the VTEGD.

- *Lifelong Skills Training Project (LTSP)*

  As part of the project:

  - Education needs of teachers in 16 areas have been determined in line with the development rate of the sector.
  - The selection criteria of the teachers to be trained abroad as teacher trainers in the determined areas have been determined.
  - The process for determining the organizations and institutions to provide teachers' training is ongoing.

Project Monitoring and Evaluation Reports

- The status of the projects invited to 2016, 2017, and 2018 regional exhibitions of the "Research Project Contest of High School Students" organized by TÜBİTAK in order to encourage students who are attending high school in the schools and institutions attached to our Ministry to work in basic, social and applied sciences, direct their work, and contribute to the development of their existing scientific studies, and the status of vocational and technical secondary education schools and institutions with respect to all school types have been analyzed and reported.
- The status of grant-eligible project proposals presented by institutions affiliated with the VTEGD included in the Main Action Plan of 2016 and 2017 Erasmus+ Program within the scope of the projects supported to contribute to the training of qualified workforce through enhancing the quality and attraction of vocational education in Turkey by means of Erasmus+ program by the Center for EU Education and Youth Programmes have been analyzed and reported.

3

Vocational and Technical Education in the World

3.1 Vocational and Technical Education in Some Countries

The importance attributed to vocational and technical education, which is called *career and technical education*, *occupational education*, and *technical education* in different countries has increased significantly with the globalization of economies and markets. The construct and implementation of vocational and technical education have been diversified according to countries with the differentiation of human resources and sectoral needs. Design and implementation of education in some countries having long-established vocational education systems, applying different vocational education models, and located in different geographical regions are described below briefly to give an opinion on the status of vocational education in the world.

3.1 Germany

In Germany, which has a federal government structure, responsibilities for the structure and management of education are undertaken by the states. Intense interaction between the government, businesses and the market has long since enabled Germany to have an effective vocational education (Bolat, 2016). The vocational education law was enacted in 1969 and the vocational education regulation came into force in 1972 in Germany which has a vocational education teacher training policy more than 150 years since vocational-oriented schools established in the early 19th century (Bolat, 2016).

The academic and vocational education of students is clearly separated in a dual system, and students undergoing vocational and technical education take general academic courses and vocational courses together. Students in vocational schools are provided with theoretical courses on their own fields and economy, social sciences, foreign languages, and other main disciplines one or two days a week. Students are provided with on-the-job training on their fields in various businesses during other days of the week, and they are paid approximately 30% of the salaries of employees in their fields (Ayeni, 2015). An important feature of the dual system is that it requires a close interaction between school and private sector organizations because of its focus on on-the-job training (Ekşioğlu, 2017).

The vocational and technical education system of Germany, which was one of the two countries with the fastest and most stable growing economy, along with Japan, has been an example for many countries.

However, the rapid change in economy and employer policies in the last decade has led to a discussion of the efficiency of Germany's vocational and technical education system (Keating, Medrich, Volkoff ve Perry, 2002). The effectively of the dual vocational education system, the founding purpose of which is to feed the production and services sectors with competent human resource, has come up largely when the sectors requiring top-level skills such as creativity and analytic thinking became the focus of the economy (Solga, Protsch, Ebner, and Brzinsky-Fay, 2014). The rapid spread of automation systems in many sectors leads to limitations in vocational education, which puts on-the-job training at the center. Many organizations, which update their processes with automation, accepts students with less vocational education over time. In addition, there are limited number of organizations in the eastern part of the country where students can undergo internship and skills training. The high level of wages paid to students attending on-the-job training within the scope of vocational education in Germany, where employee salaries are above the OECD average, is another point criticized by organizations (Keating et al., 2002). Difficulties of academically low-achieving students in entering the system arising from intense on-the-job training and the existing curricula in the dual system offering a significant opportunity in terms of employment rates are shown as another weak point in the German vocational education system (Solga et al, 2014).

Students who receive vocational education in the dual system should be successful in the chamber exam to complete their education successfully. The fact that the grades in the education process do not have any effect on the chamber exam may lead the students to focus on the exam rather than the process (Hoeckel and Schwartz, 2010). Fazekas and Field (2013) stated that the nature of the examinations in the education and the chamber exams may vary according to fields and regions

. For this reason, the proportion of students entering the dual vocational education system among all students in Germany shows a general decline since 2007. It is becoming difficult for vocational and technical education students to receive adequate on-the-job training, and some recommendations for the reorganization of the dual system to be more flexible come from organizations serving in different sectors (Keating et al., 2002).

3.2 United States of America (USA)

In the United States, education at primary and secondary levels is expressed as K12 and the whole responsibility of this process is left to the states. Due to the lack of a central education ministry, the structure of education and school types may vary from one state to another. This flexible structure of the USA in the field of education is also reflected in vocational and technical education, which is called career and technical education (Bolat, 2016). The mission of vocational and technical education in the United States has been defined as "transformation of education and improving the standard of education in order for proficiencies d jobs to be executed in a qualified way" (UNESCO, 2015). The increase in the focus on vocational and technical education was realized within the scope of educational reform in the early 1990s. Due to the economic competition with Germany, politicians working in the field of education examined the German vocational and technical education policy and wanted to make arrangements on vocational and technical education according to their country's educational structure. On the other hand, it was not possible to implement exactly the same vocational education system with Germany due to the number of students, student trends and the structure of sectors in the US. The *School-to-Work Opportunities* Act adopted in 1994 takes into account the USA's labor and human resource needs and is aimed to increase the quality of vocational education through on-the-job training (Kreysing, 2001). This Act, as in the whole education system, allows for following policies that vary by states in the field of vocational and technical education.

Although the conditions differ, every student who complete his/her vocational and technical education in any state is entitled by all states to attend academic education.

Vocational and technical education in high schools began in the 1950s, where students were provided with field education such as accounting, stenography, and fast writing. Education in the fields of agriculture, home economics, etc. in some high schools and colleges has been become dense after the 1960s. The two-year colleges offer vocational and technical education to students as well. It is aimed in four-year colleges to develop skills of students about job and profession, instead of an academically intensive curriculum. The demand for education given in two-year colleges with limited academic courses was increased, and by the end of the 1970s more than four million students received vocational education. As of 2014, the number of students attending vocational education at high school and college level exceeded 12.5 million (UNESCO, 2015).

The most important problem experienced in the application of vocational and technical education is that one of the countries with the highest rate of dropout in the field of vocational education is America. The surveys on vocational education preferences show that the students do not have sufficient financial resources to receive vocational education, while students with sufficient financial resources consider vocational education as a risky area (Kuzcera and Field, 2013). The second problem is that young people of general high school age are at a lower level in terms of basic cognitive skills than those in OECD countries.

As a result of this situation, students consider continuing their education as a risk. Another problem that is criticized is that vocational education students and graduates in the United States are open to the possibility of misconduct by employers as there is no standard for on-the-job training (Kuzcera and Field, 2013). In many vocational education systems, the performance of a student who develop his/her skills by taking internship and skills training in the relevant field is evaluated by teachers and employers before employment.

But in America, employers can employ many young people together thanks to the flexibility of recruitment policies, so that they can observe low performers on the job and discharge them in a short time. The fact that America has the lowest score in this indicator called employment protection (Kuzcera ve Field, 2013) has a negative impact on the vocational education preferences of young people.

3.3 Australia

The vocational and technical education in Australia has been designed as an education area that has been implemented after high school. On the other hand, in some high schools, apprenticeship trainings are offered to students at the 10th, 11th and 12th grades. Vocational and technical education is carried out nationwide through the Technical and Further Education Institution (TAFE). The fact that the common competencies sought in the students despite the federal structure of the country as well as monitoring processes held have shown that Australia is approaching vocational and technical education from a centralist perspective (Bolat, 2016).

The Australian Quality Training Framework has been created to monitor the quality and effectiveness of vocational education and to maintain the quality provided. Internship training takes 1-2 years, and apprenticeship training takes 3-4 years, whereas students receive wages in return for the services they provide and the work they do (Hoeckel and Schwartz, 2010).

The most striking characteristic of the Australian vocational and technical education is that the education provided in this field is highly flexible and that the students participating in the system can be composed of quite different age groups. In 2007, it was stated that 11.3% of the population aged between 15-64 had present or past records of at least one vocational program (Hoeckel, Field, Justesen and Kim, 2008).

The vocational education provided can be in various forms such as simple vocational modules, formal class education, and distance education. As of 2008, the number of institutions offering vocational education through public and private sector is over 4,000 (Hoeckel, Field, Justesen, and Kim, 2008).

One of the distinguishing points of vocational education in Australia is that education is mostly created by sector experts, and the role of the government in this matter is limited to advice and approval (Ayeni, 2015). Another distinguishing factor is the award, by some vocational and technical education institutions in Australia, of a degree of graduation to those who have successfully completed their education. The fact that both universities and vocational and technical schools give graduation degree in the fields of viticulture, aquaculture, information technologies, music, visual arts, cookery etc. leads to a decrease in the difference between universities and vocational institutions.

One of the problems experienced in vocational and technical education in Australia is the lack of adequate workforce in some sectors and the young population starting to work in these sectors without any training due to the urgent need. The fact that the responsibilities of the state, the government and other stakeholders on the problems in vocational education are not clearly separated, the lack of clear rules for the financing of the schools and the lack of adequate planning for the future of vocational education are stated as the other problems that Australia faces (Hoeckel et al., 2008).

3.4 Austria

28.4% of the national income in 2014, which is about 319 billion Euro in Austria, is from production-based sectors and 70.3% from the service sector in Austria, which is one of the countries with the highest level of national income in Europe (Bliem, Petanovitsch, and Schmid, 2016). The outstanding characteristics of Austria in Europe are the tourism services that continue throughout the year and the high-level production sector. Austria has a dual system, similar to Germany, in terms of vocational and technical education, and students are educated in secondary education institutions providing general academic education and vocational education. Students aged between 15 and 18 who prefer to take vocational and technical education are provided with education in a range of two to four years. In Austria, vocational and technical education institutions are divided into two groups: *Berufsbildende Mittlere Schulen* (BMS) and *Berufsbildende Höhere Schulen* (BHS). In the BMS, students in the 14-18 age group receive vocational training lasting three to four years, and most of the graduates are directly employed by the private sector. As for the BHS, students between the ages of 14-19 receive education for four to five years. BHS education is considered more qualified than BMS training, and every BHS graduate attain a certificate of vocational competence and a certificate of his/her ability to pass to higher education (Lukas, 2013). It is enough for a student to study in BMS, but ifs/he wants to pass BHS from BMS, s/he is required to be at a certain level of academic achievement and perform well in a general skill test (OECD, 2017). Compared to Germany, another country that implements a dual vocational education system, the transition processes and rights among students in Austria are more flexible (Ebner ve Nikolai, 2010).

The fact that the graduates of BMS and BHS have a high rate of internships and on-the-job training in different sectors enrich the post-graduation employment opportunities. The quality of vocational education and its accompanying opportunities generates a high level of demand for vocational and technical education from students in Austria.

79.7% of students at secondary level in 2007 and around 70% in 2017 preferred institutions and programs providing vocational education (Lukas, 2013; OECD, 2017). Considering that the proportion of students who prefer vocational education at secondary level among the OECD countries is 46%, it appears that students' orientation towards vocational education is very high in Austria (OECD, 2017).

The strengths of Austrian vocational and technical education are the focus of on-the-job training in vocational training under BMS and BHS and the continuous monitoring of implementation, the employment of the graduates in the private sector in a short period of time, providing flexibility to students compared to the traditional dual vocational education system, and the fact that a significant part of the teachers work in the private sector in addition to school work. The development areas are as follows: the increase in inefficiency and drop-out rates at ninth grade due to the preference changes among the school types of the students at this grade, the decline in the basic cognitive skills of the students who receive vocational training due to the dual system, and financially challenging nature of vocational training opportunities offered by the private sector (OECD, 2017).

3.5 People's Republic of China

Vocational and technical education in the People's Republic of China, which is a model for economic growth, was perceived as a secondary and idle area of education until the 1980s, similar to the situation in Japan (Han and Singh, 2004). The rapid economic growth of the country and the fact that the need for qualified human resources in terms of labor force has gained importance in a short period of time has led to a reform movement in vocational and technical education (Litao, 2016). At the beginning of the 2000s, the government identified vocational and technical education as the most important development area of formal education and established a strategic plan for its improvement. The studies and pilot applications under the strategic plan were merged in 2014 within the framework of the Vocational and Technical Education Plan. In line with this plan, it was decided to convert almost half of the 600 existing universities in China to applied science universities by 2020 (Litao, 2016). In addition to the College Entrance Examination which is a single and central examination, a second central exam will be designed and applied for students who want to receive vocational education. In addition, within the framework of the plan, vocational and technical education institutions in China will be encouraged to cooperate with the institutions providing vocational education abroad, and China's globalization strategy will be harmonized.

When the current situation of vocational education in China is examined, it appears that the system has some strengths, but the elements that are open to development are dominant. The increase in the number of students receiving education in the current vocational education system compared to the previous years and the decrease in school drop rates are some of the strengths of the system.

The fact that the teachers who provide vocational education are obliged to work at least one month every year in institutions providing on-the-job training and the tendency of vocational schools to select teachers from among those currently working in the sector are other elements that make the current system strong (OECD, 2010). According to Klorer and Stephan (2015), who stated that there are many elements of the system that are open to improvement, the fact that it lags behind Western countries in terms of vocational education is the most important factor that prevents the further development of China. China, which has the largest population in the world, did not feel the need for human resources for a long time and therefore the development of its human resources is mostly left to universities offering undergraduate and graduate education. The second problem related to Chinese vocational and technical education is the lack of adequate interaction with the sectors in the configuration of vocational education (Klorer and Stephan, 2015). The fact that necessary importance was never attached to vocational education has led to negligence of potential benefits of vocational education for the growth of the sectors. Another issue highlighted about vocational education is that the standards of the schools that provide vocational and technical education vary among regions and the indicators related to school qualifications are not monitored (EICC and REAP, 2015). Some of the existing vocational schools offer education with a standard curriculum and offer their students the opportunity to take on-the-job training, but some of them cannot provide these opportunities to their students. In the industrially developed eastern regions of the country, richer education opportunities are offered in vocational schools, whereas the diversity of schools and opportunities decreases in vocational schools, and in the middle and inner parts of the country (Han and Singh, 2004). The fact that schools are not monitored in terms of educational indicators makes it difficult for the students to make conscious choices (EICC and REAP, 2015).

3.6 Finland

In Finland, students decide which high school type to continue their education for their career at the end of nine years of compulsory education. There are two types of schools to choose: general high schools and vocational schools (Koukku, Kyrö, Packalen and Volmari, 2012). Students can choose one of the two school types, both of which last three years, or they can study simultaneously in both school types according to their preferences (UNESCO, 2013). If the two programs are selected together, the duration of education can be up to four years. If a student choose to take vocational and technical education in high school, s/he is expected to successfully complete a program of 120 credits in total within three years. The structure of the program in which the weight is given to the courses and on-the-job training related to the field of profession can be summarized as follows (Kyrö, 2006).

- Vocational courses and on-the-job training (internship and skills training)
  – 90 credits
- Common topics - 20 credits (16 credits compulsory, 4 credits elective)
- Optional topics for students – 10 credits (graduation project is obligatory)

The fields of vocational education are classified as follows: humanities and educational sciences, cultural studies, tourism, food services, social services, health and sports, natural resources and environment, technology, communication and transportation, natural sciences and social studies, and business and management (Finnish National Board of Education, 2008). The most preferred vocational fields by the students are technology, communication, and transportation as of 2004 (Kyrö, 2006).

In most vocational and technical education areas, students can benefit from employment opportunities after graduation. On the other hand, there is a requirement to graduate from general high school in addition to vocational education to graduate from the branches such as police school, air traffic control, etc.(Finnish National Board of Education, 2008). The curriculum developed for vocational schools is focused on the development of vocational skills, but academic issues that are important to the characteristics of the field are also included in the curriculum. As is the case in all fields of education, there are laws in the area of vocational education to support low-income students by the government.

The main limitation of vocational and technical education in Finland is the development of policies that enable students to choose vocational education among the educational opportunities offered. Although the interest in vocational and technical education has partially increased in recent years, the increase in school dropout rates of students is regarded as an issue that needs to be solved by educational politicians (Stenström and Virolainen, 2014). The studies carried out with the students who left the vocational and technical education system without graduation indicate that if their experiences with the system are not satisfactory or if they do not match their expectations, the students move to other opportunities provided by the government (Virolainen and Stenström, 2014).

3.7 Japan

The role and importance of vocational and technical education in Japan, where all sectors of industry are focused on production and export, has been discussed for a long time (Keating et al, 2002). The Japanese community, which is regarded as a trust society (Fukuyama, 1995), have designed their education system within the framework of innovative production. In Japan, which is one of the few countries where all individuals have literacy skills, traditional views on education make it difficult to develop vocational and technical education over the years. In Japan, it is demanded that individuals receive the highest possible level of quality education and any situation where this condition is not satisfied is treated with suspicion. According to Tsukamoto (2016), parents in Japan attach importance to academic education rather than vocational and technical education. Vocational and technical education is regarded as an option that can be preferred by students with relatively low academic performance or low socioeconomic status (Tsukamoto, 2016). The fact that the radical increase in the number of universities and university graduates since the 1980s was not compatible with the employment opportunities has led to an increase in youth unemployment rates. Furthermore, Japan's export-oriented production approach and innovative technologies have increased the need for experts in the sectors and helped to start changing the perception of vocational education.

For many years in Japan, the responsibility of raising engineers and qualified technical experts was left to universities and vocational schools were of secondary importance. Currently, vocational education in Japan is carried out by the government-run colleges, technical colleges (technology colleges), vocational education schools and institutes managed by private sector institutions. The fields of education in the colleges are humanities, social sciences, teacher education and home economics. Technical colleges are institutions where secondary school graduates participate and five-year intensive vocational education is given.

Although they serve a relatively small number of students, vocational training can be provided in Specialized Training Courses and Miscellaneous Schools (Bolat, 2016). In Japan, especially in line with the needs of the private sector, which focuses on production and export, the importance of raising human resources is emphasized and institutes where the management is in companies are established for this purpose. Nissan Technical College, which serves students since 1938, can be shown as an example to these institutes (Sugama, 1975).

It has been determined by OECD observers that vocational education has not been sufficiently structured due to the long-term negative perception of vocational and technical education in Japan and that there are important gaps in this field (Keating et al, 2002). It is emphasized that vocational and technical education does not have a model in Japan, which is accepted as having a dual system because of the concrete separation between vocational and technical education and general education, and that it is long since structured and its importance has not been understood properly (Dore and Sako, 1989). The criticism that German dual vocational education system does not let transitivity and is inflexible in general is valid for Japan as well. The growth of the gap between general unemployment and youth unemployment is regarded as a result of the fact that vocational education is not based on a model and is not productive due to changes in line with needs (Keating et al., 2002). Japan's focus on the use of high technology in production and service areas has increased the employment rates of academically qualified students who are thought to be successful in these areas. However, there are no similar opportunities in terms of employment in vocational education. This indicates that the need for vocational education graduates serving the sustainability of information technologies is not fully understood (Sakamoto-Vanderberg, 1998).

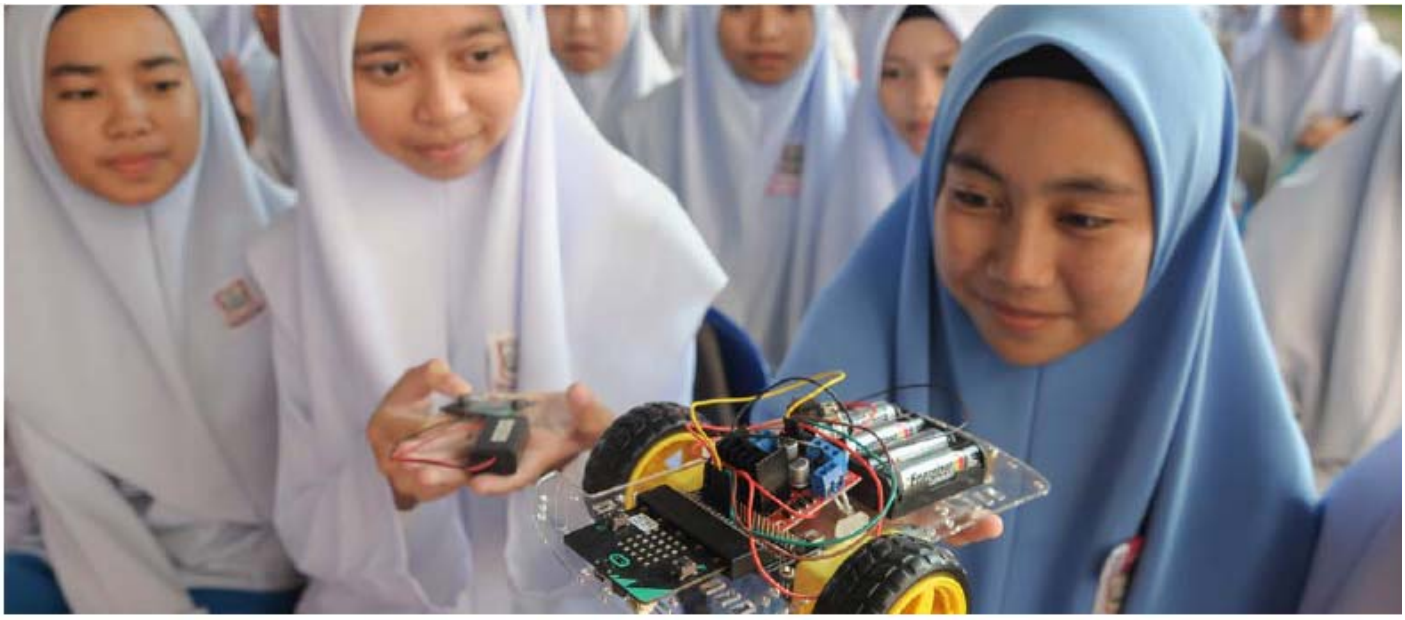
3.8 Malaysia

Malaysia, where the first vocational and technical education schools dating back to the 1890s, is one of the fastest growing economies in the Asian region in recent years (Nur Hafizah Mohd Sabri, 2012). Although vocational education schools have a history of more than a hundred years in Malaysia, it was started to attach importance to this educational area in 1980s like other Asian countries (Nur Fatin Binti and Mohd Sauffie, 2015).

The aim of vocational and technical education in Malaysia has been defined as providing students by vocational skills by means of on-the-job training, and it has been emphasized that this aim is different from the aim of general education, which is focused on developing academic skills (Nur Fatin Binti and Mohd Sauffie, 2015). When structuring vocational and technical education, National Occupational Skill Standards (NOSS), which group the individuals into eight groups according to their skill level, are taken into account. According to these standards, an individual can perform operation and production according to the knowledge and skills he/she has, and can work as a controller and supervisor at the third and fourth levels, and become a manager at the fifth level and above (Affero and Razali, 2013).

Students and graduates who receive vocational education are employed within the framework of standards according to the level of theoretical and on-the-job training.

The negative social perception of vocational and technical education and the lack of understanding of the importance of employers by the employers are slowing the development of vocational education in Malaysia. The role of vocational education in the eyes of the society is to ensure that students with low academic performance can find work through vocational schools and prevent school dropouts (Affero ve Razali, 2013). It is not yet understood that vocational education has a strategic role in the national economy and creates personal employment opportunities. Another problem with vocational education in Malaysia is that it does not have a standard structure due to the fact that vocational education is carried out in different forms by public and private institutes. The diversity in the structure of the educational programs, designed in line with the needs, can cause students and parents to have difficulty in school preferences. Public schools and private institutions providing education in the same field can vary greatly in terms of the opportunities and educational processes they offer (Affero ve Razali, 2013).



3.2 Global Trends in Vocational and Technical Education

The traditional view towards vocational education is changing in the world, where the professional mobility has increased and individuals can be employed in different countries in accordance with their competencies. The importance of raising individuals equipped with academic skills as well as individuals vocationally qualified in order for nations to reach their target economic level within the scope of their long-term plans for 2020s and 2030s begins to be understood. Although the structure and process of vocational education vary, nations' investments in vocational and technical education are increasing and it appears that they have been developing new policies to improve the processes. Global trends in the field of vocational education are explained in items (Cisco Research, 2011; Hoeckel, 2008; OECD, 2018; Yasin, Nur, Ridzwan, Ashikin and Bekri, 2013; Wheelahan and Moodie, 2016).

- ***Students begin to receive vocational and technical education at an earlier age.***
  Due to the increasing need for highly educated workforce and students' intent on participating in employment in a short time, some policies for starting vocational education at an earlier age are being developed. In order to provide the necessary workforce in systems where vocational and technical education is given only after high school, various vocational programs are launched at high school level, so that students at lower educational levels are introduced to vocational education and included in the process.

- ***The government's and people's perception of "subordinate education" attributed to vocational education is changing.***
  The fact that rapid economic growth in many countries is incompatible with the quality of the trained human resources has led to a significant increase in youth unemployment rates. The decrease in employment rates of university and general high school graduates in the cultures where academic education is seen as a priority leads to an understanding of the importance of vocational education. Being a part of the human resource that grows directly towards the sectors through vocational education considered more attractive by students and parents.

  It is also observed that the demand and perception towards vocational education is changing in the Asian countries, particularly Malaysia, Japan and China, where there has been a negative perception towards vocational and technical education.

- ***The framework for cooperation between vocational education institutions and sectors is expanding.***
  An effective and efficient vocational education depends on the relationship between sectors and vocational education institutions. Expectations of the sector experts about human resources and data on human resources required by sectors are taken into consideration together. Educational politicians analyze expectations and data together and use this information to organize vocational education. Cooperation with the sector is not only important in the shaping of vocational education, but also in the development of projects which will provide added value together and development of teacher education policies.

- ***Increasing the on-the-job training experience of vocational education students***
  A qualified vocational education of students is possible if they receive on-the-job training in modern work environments where current technologies are used. Employment of vocational education graduates in a short time depends on their ability to develop their skills attained during on-the-job training throughout their education. There are different types of on-the-job training opportunities offered to vocational education students in different countries, and no standard has been set yet regarding the quality of on-the-job training. Thus, students are started to be encouraged by government policies to undergo on-the-job training within the scope of vocational education, and efforts have been made to improve the physical conditions of vocational education institutions.

- ***The sharp distinction between general and vocational education has been decreasing.***
  The quality of academic and vocational education offered to students at different levels of education are converging and the possibilities of transition between school types are being flourishing. The dual systems in Germany and Japan, which prompt students to choose either one of the two career paths, and other practices that limit the transition of students between school types are being criticized. The number of common fields and branches taught in both academic education and vocational education systems is increasing. This allows the provision of human resources with different levels of competence for the same professions.

OECD (2014) has examined the trends in vocational education in different countries and identified characteristics that a successful vocational education system should have:

- The priority criterion for the establishment of the structure of vocational education and training programs being the expectations of the sectors.
- Acquiring adequate academic skills in vocational education programs, primarily in terms of reading comprehension and basic numerical skills.
- Vocational programs minimizing dropouts and maximizing diversity in the target group.
- Provision of education not only for young people but also for adults and individuals who have to live in their homes by means of proper infrastructures.
- Following policies that encourage transition to vocational education and academic education institutions at higher education level.
- Maximizing the quality of internship and on-the-job training processes in all fields of vocational education.
- Evaluations to monitor internship and on-the-job training of students in all types and programs of vocational education.
- Providing teachers and instructors in vocational education with services improving their bases not only in terms of pedagogical but also vocational knowledge and skills.
- Collaborating with sector experts in determining the competencies expected from students in the programs.
- Ensuring that the competencies expected from students across the country are shared on the basis of professional fields, promoting the development of some additional competencies locally.
- Setting utmost realistic, accessible and observable criteria for determining the competencies expected from the students in the programs.
- Establishing and implementing standards for the evaluation of students' psychomotor skills within the scope of internship and skills trainings focused in vocational education.
- Vocational guidance involving career opportunities to be provided to students by vocational education and identifying students' tendency towards vocational fields.
- Monitoring processes where the quality of vocational education is assessed at national level, collection of data on indicators considered important at national and international level in these processes.

4

Studies on Vocational and Technical Education in Turkey

A number of studies have been conducted on Turkey's position in terms national vocational and technical education. In the reports prepared by non-governmental organizations, academic researchers and practitioners, the current situation of vocational education and their solution suggestions have been presented. The observations on the current situation of vocational and technical education and the suggestions presented are examined under separate headings. Developments related to the observations and suggestions expressed in the studies are presented in a separate section at the end of the chapter.

The problems identified and solutions offered in the report "Vocational and Technical Education in Turkey: Problems - Suggestions" prepared by the Independent Industrialists' and Businessmen's Association (Şencan, 2008) are summarized below.

Observations and Suggestions

- The focus of the Vocational Education Law, dating back to Apprenticeship and Vocational Education Law published in 1986 and rearranged in 2001, is apprenticeship and vocational training in enterprises. Currently, there is a need for a structured education law that encompasses all of the vocational training in non-formal and formal education institutions.
- It has been stated that the labor-market adaptation of the teaching modules developed as part of the modular structure applied in vocational education, taking the opinions of the sectors as well, and dissemination of the same would be beneficial. The existing module contents have many restrictions in terms of providing the skills intended for the modern nature of the sector.
- The opinions of many different institutions and stakeholders should be taken on how to improve the quality of vocational education. Vocational education, which plays an important role in the future of the national economy, is not a limited area of education that concerns only the Ministry of National Education (MoNE) and the Council of Higher Education (YÖK); it should be ensured that Turkish Employment Agency, Vocational Qualifications Authority, the EU center, Turkish Statistical Institute, Ministries, associations, and chambers involve the process effectively.
- The importance of augmenting the projects, activities and product development activities with national and international stakeholders in terms of encouraging vocational education have been emphasized. Partnerships between the MoNE and various stakeholders such as the World Bank and the European Union must be established to improve vocational education on several counts; and the reflections of value added from these partnerships on vocational education should be made visible. In addition, the responsibility for project development should not belong only to the Ministry and vocational education institutions should be encouraged to implement projects and activities.
- It is recommended that the Vocational Education Council of the Ministry in charge of monitoring vocational education should work effectively and periodic monitoring activities should be conducted for this purpose. It is proposed to remove the expression related to "meeting of the council when deemed necessary" in current text of the Law and distribute the tasks.
- It is suggested that Provincial Education Councils should convene on a periodic order to monitor non-formal vocational education in their provinces. A council is composed of the following members: mayor or his/her representative; provincial director of health or his/her representative; provincial director of industry and commerce; the head of union of chambers of tradesmen and craftsmen; head of provincial chamber of commerce or his/her representative; head of provincial chamber of industry or his/her representative; deputy director of the provincial national education responsible for vocational education, school principal carrying out secretarial duties for the commission; one administrator from each vocational and technical education school in the province; workers' union representative to the province assigned by the confederation representing the highest number of workers, head of provincial treasury or his/her representative; provincial director of Turkish Employment Agency or his/her representative; insurance director of the Social Insurance Institution or his/her representative; employers union representative to the province assigned by the confederation representing the highest number of employers, The current structure of the Board leads to inadequate participation in the meetings. For this reason, it is recommended that the council be reorganized in such a way that it can meet at certain time intervals and perform the monitoring task.

In Gür and Çelik's (2009) study with the title "National Education System in Turkey: Structural Problems and Suggestions", it has been stated that the schools providing vocational education have started to be regarded as institutions that direct students to higher education, although the main purpose of vocational education is to prepare students for the business world.

Stating that the belief that the proportion of students choosing vocational high schools in developed countries is quite high does not correspond with the data presented by the OECD, the researchers emphasized that the choice of vocational education depends on each country's educational structure, conditions of employment and the attractiveness of vocational education in the respective countries. In the study, it was stated that the most important factor for increasing the tendency towards vocational education and reaching the desired level of vocational education is increasing the demand for vocational education graduates. However, the fact that there is no significant difference between the average incomes of general high school and vocational education graduates as of 2009 is considered as a factor affecting the preferences of students against vocational education. The researchers made the following recommendations to the Ministry of National Education to enhance the quality and attraction of vocational education: enhance the interaction with the business world, follow policies to increase the support of the business world to vocational education, and plan the workforce currently needed and to be needed in the future.

A report on "Determination of the Encouraging Measures to Increase the Dissemination and Quality of Vocational and Technical Education" was prepared in 2010 by the Coordination Board for the Improvement of the Investment Environment supported by the Union of Chambers and Commodity Exchanges of Turkey (TOBB). In this report, the current vocational education system is compared with vocational education systems in other countries in many respects and the development areas of the Turkish vocational education system are listed as follows.

Observations

- Participation of private sector and other stakeholders in shaping and financing vocational education is low.
- All the responsibility of vocational education belongs to the MoNE in the current system.
- Budget allocated to vocational education is low compared to the European countries.
- There are gender differences in terms of access to education.
- Vocational guidance and counseling services are not effective enough.
- Internship programs do not have the required qualification.
- Equipments in educational areas such as laboratories and workshops regarding the current professions have not caught up with new technologies.
- Negative prejudices against vocational high schools could not be overcome.

Özer, Çavuşoğlu and Gür (2011) described the 2000s as a period of restoration and recovery in vocational education.

Observations

Stating that vocational and technical education had been emphasized in all government programs after the establishment of the Republic, the researchers remarked that almost one in two students preferred vocational education at the end of 1990s, but this increasing tendency was ended with the decision of the coefficient taken by the Council of Higher Education. This practice, which provides an important limitation to the transition of vocational education institution graduates to higher education, continued until 2008 despite the reaction of both the business world and society. The decrease in the proportion of students preferring vocational high school due to coefficient application has been partially broken, and the proportion have started to increase again thanks to open admission to vocational colleges, statements by industrialists and businessmen about the importance of vocational education, and promotional activities such as "Meslek Lisesi Memleket Meselesi" carried out by and between Koç Holding and the MoNE. Researchers pointed out that the number of vocational high school graduates enrolled in 130,000-150,000 undergraduate quotas was about 30,000, which declined nearly to 10,000 after the coefficient application. Other important problems caused by the coefficient application have been stated as the decrease in the proportion of female students participating in vocational education and the loss of heterogeneity in the student profile in higher education. Another situation underlined in the study is that open admission to vocational colleges deteriorates the quality in higher education. The researchers have regarded the Project for Strengthening Vocational and Technical Education System (SVTE), the Law on Vocational Qualifications Authority, etc. put into effect after 2002 in particular as significant steps to improvement of vocational education.

The problems in the current vocational education are summarized as follows in the research report of Altay and Üstün (2011), the title of which is "Vocational Education System" supported by the Study-Research Service of Konya Chamber of Commerce.

Observations

- Professional guidance activities for students, especially at secondary education level, are not as effective as desired.
- There is a need to update existing curricula in vocational and technical high schools.
- There adaptation problems between human resources and employment fields due to lack of analytical approaches about how much workforce is needed in every field.
- There are repetitive contents in vocational education curricula at secondary and higher education level.

The findings of the report "Cooperation for Quality in Vocational Education: Updated Situation Analysis in Vocational and Technical Education" prepared in 2012 with support of Education Reform Initiative (ERG) and Koç Group part of the project "Meslek Lisesi Memleket Meselesi" are given below.

Observations

- The proportion of students preferring vocational education is increasing in parallel with the increasing the level of secondary education schooling rate in Turkey.
- 35% of females and 13% of males between the ages of 15-19 neither participate in labor force nor study at any school.
- Success and socio-economic differentiation among school types are reflected in vocational and technical education as well. Vocational education, mostly preferred by students and families with relatively low socioeconomic status in Turkey.
- The resources allocated to vocational education should be increased by taking into account the increasing student demand too.
- Among the school types in secondary education, vocational and technical schools are the institutions with the highest dropout rate (9.4%).
- In the well-attended study conducted through the surveys, it was seen that the students did not have vocational skills to the extent expected by the sector. In the same study, it was determined that approximately 42% of the students who received vocational training thought that the education they received is not qualified enough for the work they do.
- Analyzing together the data obtained from the e-Graduate platform and the 2009 Household Labor Force Survey, it appears that nearly 80% of vocational education graduates find their first permanent jobs faster than general high school graduates.

In the report "Vocational Skills Acquisition in the Framework of Lifelong Learning: International Trends" by Köseleci (2012) with support from ERG, current trends in vocational education have been examined comparatively. The high points of the Lisbon Report and the report on the status of vocational education in Turkey, which is emphasized frequently in the policies of European Union, are expressed as follows.

Observations and Suggestions

- Reduction of school diversity in secondary education is regarded as an application that enables high schools and vocational high schools to meet under a common roof. Increasing the duration of education of vocational and technical high schools to four years, bringing them to a similar structure in terms of duration with general high schools and decreasing the diversity in the types of schools has been regarded as an indication that the fragmented structure is ended in vocational education.
- It is anticipated that the modular presentation of curricula as of 2006-2007 would allow students to receive education according to their own wishes and orientations in schools where diversity of types were reduced.
- The importance of establishing the National Qualification System (NQS), which is the basis of occupational standards, through MYK and of the implementation of the decisions about vocational education through/with the support of this system has been underlined.
- It has been stated that the practices providing students with more opportunities for on-the-job training, which is the essence of vocational and technical education, have been realized.

It is underlined that it has become a legal requirement for all businesses with more than ten employees to offer skills training to vocational education students and such businesses would have to pay administrative fines if they do not provide skills training, pursuant to the Omnibus Law entered into force in February 2011. Another development mentioned is the establishment of protocols for cooperation between the leading businesses of the private sector, especially in automotive, electronics, construction, textile, and tourism, and the MoNE.

- Enrichment of opportunities for adults and disadvantaged groups to receive vocational education is another area of importance in the report. Activities organized for this purpose by MoNE Vocational Training Centers and Public Education Centers are explained, and importance of adult vocational education services by Specialized Vocational Training Centers (SVTC) carried out by Turkish Chamber of Trade and Commodity Exchange (TOBB) is underlined.

The supply and demand balance in terms of human resources in Turkey were examined in the report "Determination of Turkey's Human Resources" by Gür et al. (2012). In this context, suggestions have been made to increase the quality of the labor force by determining the nature of the national labor force and the differences between the expectations of the labor force and the sector.

Observations

One of the findings of the study is that the positions where the enterprises have difficulty in finding employees are generally at the level defined generally as "intermediate staff". The fact that high-tech industrial production, where academic skills come forward, is not yet sufficiently widespread despite the increase in schooling and higher education leads to mismatch between the raised and sought labor force. Approximately one-third of the firms surveyed stated that they could not fill their vacant positions due to lack of qualified human resource. It is suggested to investigate the factors underlying the graduates' rate of employment in the service sector, although they are expected to work in industry in line with their educational background and skills. The importance of making vocational and career guidance activities more effective and providing students with vocational skills starting from basic education in order to eliminate the mismatch between the labor force and the skills sought is emphasized.

Although the majority of the firms stated during the interviews that being a vocational education graduate is a reason for preference, but there is not enough value given in terms of wages and respectability to vocational education graduates.

Suggestions

As for the suggestions on workforce education, the following points are emphasized: shaping vocational education policy in relation to sectors, controlling internship processes in a way that increases school-industry interaction, and developing not only vocational skills, but also leadership skills, problem solving, foreign language and innovation activities.

Zeynep et al (2012) has conducted interviews with the administrators and teachers of schools successful in vocational education and the organizations cooperating with these schools and identified what has to be done to increase the quality of vocational education.

Observations and Suggestions

The characteristics which increase the quality in the schools that have succeeded are stated as follows: school management's efforts to establish cooperation with the sector, planning of the internship process, monitoring the role and development of students in internship processes, recognition of the school, quality of students and teachers, leadership of the principal and the administrators, configuration of collaborations to be mutually beneficial, and motivation and rewarding. Companies and sector representatives described the elements of qualified on-the-job training as follows: selection of schools that follow students closely and are easily accessible in terms of transportation, taking into account the needs of the business as well when making the internship plan, close monitoring of student's progress by the business as well, taking into account the responsibilities of the businesses related to internship, transformation of cooperation with schools into employment, and support by businesses not only to students but also to teachers.

The areas of development identified observed and identified on a data-driven basis in the report "Quality in Vocational and Technical Education: Strategy Document" prepared by ERG (2012). In this report, what has to be done to improve quality in the education processes are presented in the form of objectives.

Observations and Suggestions

The first of the stated objectives is that all students who have completed secondary education have basic skills. In order to achieve this goal, some policies supporting vocational education students to have basic academic skills while ensuring that academic education students take vocational courses in line with their interests and abilities, and providing students with environments to practice should be follows. The second objective is to improve the quality of vocational and technical education. Recommendations for this purpose are as follows: improvement of curricula, development of teachers' and administrators' on-the-job and pedagogical skills, development of guidance and career counseling services, improvement of educational settings, and development of skills and internship training through increased cooperation with businesses. The third objective is expressed as the establishment and strengthening of mechanisms to support vocational education. Suggestions offered to achieve this goal are as follows: establishment of national vocational competences system and keeping the same up-to-date and establishing a monitoring mechanism based on statistical data on labor markets. The final objective presented in the report is the improvement of the social status of vocational and technical education. Suggestions offered to achieve this goal are as follows: increasing horizontal and vertical transition opportunities by providing flexibility to students in terms of education, enrichment of lifelong learning opportunities, and information campaigns on vocational and technical education.

In the report on "Vocational Education in Turkey" prepared by Korkmaz (2015) with the support of İzmir Chamber of Commerce, the status of vocational education, problems observed and solutions suggests for the period 2012-2013 were presented. The problems and the solutions proposed in the report are briefly summarized.

Observations and Suggestions

- The first problem expressed is that vocational education graduates do not meet the needs of the sector. It is emphasized that the curricula of the students in vocational education are not sufficient to meet the human resource needs of the sectors where modern technologies are maintained. It is proposed to revise the vocational education curricula from this point of view and to upgrade all the machinery, instruments and equipments used in education to the same level with the sector.
- The lack of flexibility of existing vocational education programs and the fact that the school cannot be structured by considering the needs of the school is regarded as an important restriction. It is suggested that the needs and characteristics of the region should be determined for the establishment and renovation of schools and the curricula should be designed within the scope of these needs.
- The skills that the students should have in order to be successful in different professional fields vary. Training content and on-the-job training furnished to students should be compatible with these skills determined by the Vocational Qualifications Authority (MYK).
- There is a need for policies supporting vocational education to improve the perception of students and the public towards vocational education. In the current situation, the priority of students and parents is general high schools, whereas vocational education is often seen as a secondary and inert educational area. Increasing the attractiveness of vocational education and enriching its opportunities would increase the number of students aiming to receive vocational education and improve its recognition.
- One of the most important elements of improving the quality of vocational education is to improve the field experience of teachers. Currently, the level of proficiency of the teachers and trainers working in vocational education institutions in terms of applied training is not at the desired level. Improving the field experience of teachers and trainers will increase the quality of courses based on practice.

In the report "Education Overview 2017: Monitoring and Evaluation" prepared by EĞİTİM-BİR-SEN, the indicators related to vocational and technical education were evaluated and the changes of various indicators by years were examined.

Observations

According to the results of PISA 2015, it is stated that there is a difference between the average scores of the students in science high schools which are the most successful school type and the average scores of the students studying in vocational education high schools and this difference corresponds to 4-5 academic years.

The change in the number of vocational and technical education students over years has been examined, and it is stated that there is a significant increase in the number of students between 2010 and 2014 in particular, but there is a partial decline in 2015 and beyond. In addition, the gender distribution of the students who received vocational education was examined and it was emphasized that 53 and 79 female students enrolled per 100 male students in 2000 and 2016, respectively. This shows that the gender distribution in vocational education has become more balanced from 2000 to 2016. Another factor examined in the report is the ranking of secondary education students in OECD countries based on a classification of general high schools and vocational high schools, and Turkey's place in this ranking. In the ranking where the Czech Republic and Austria is the two countries with highest proportion of vocational education students, Turkey is the 13th among 33 countries and over the OECD average. As for the proportion of students placed to higher education, it is stated that the proportion of vocational high school graduates declined between 2013 and 2016. Another point underlined in the report is that employment rates of graduates of vocational high schools and general high schools are pretty close to each other and on-the-job training attained by vocational education graduates does not yield sufficient advantages in terms of employment rates.

Developments in the field of vocational education in 2017 are described and interpreted as follows in section "Vocational-Technical Education and Religious Education", authored by Şahin İpek (2018), in 2017 Training Evaluation Report with the support of TEDMEM.

Observations

- Apprenticeship training in Vocational Education Centers is included in the scope of formal education.
- Journeyman and mastership programs applied in Vocational Education Centers will include theoretical courses for one day minimum and two days maximum. Students are allowed to complete the courses, the equivalence of which are approved by the MoNE, by means of the Open High School.
- The conditions of being older than 18 and not married to be eligible for registration to Vocational Education Centers has been removed, so that access possibilities is increased.
- The minimum fee to be paid to internship students is determined as 30% of the net amount of the minimum wage. As of 2017, this fee is calculated as TL 421.
- A journeyman or a master who has been certificated when the vocational education is finished will become eligible to get a high school diploma if s/he completes the common courses by means of the Vocational Open High School.
- Although the provision of distance education opportunities to students by means of the Vocational Open High School is considered positive, it is recommended to employ policies encouraging face-to-face education as much as possible.
- It is emphasized that the basic cognitive skills of the students are always a focus in addition to field courses, and it is stated that if this focus weakens, the rate of transition to higher education may decline.
- The removal of the conditions of being older than 18 and not married to be eligible for registration to Vocational Education Centers has been regarded as an action enhancing equal opportunities and accessibility to vocational education, and it is stated that the relevant policies should be supported continuously.
- Inclusion of representatives from private sector, provincial and district government, and VTEGD taking place near school administrators as members of the boards of thematic vocational high schools has been regarded as a functional and correct approach.

Academic Studies on Vocational and Technical Education in Turkey

Reman (1971), examined the status of vocational education in Turkey as of 1970 and has identified the following issues as core problems: lack of hardware in vocational schools, failure raise enough teachers and educators, failure of schools to cooperate with the sector and hence the workforce trained is not proportionate to needs, and lack of understanding of the role of vocational and technical education by society. It is proposed to improve the opportunities provided by the state for the development of vocational and technical education, to update the existing curricula, and to deepen the participation of the private sector in the educational processes in various ways.

Kaya (1999) examined which aspects of the vocational education system of Turkey need to be developed to solve the youth unemployment problem. The researcher stated that a qualified orientation process does not work in the education system and that the orientation activities towards the vocational and technical education schools are quite limited. Another problem mentioned is the fact that Turkish vocational education system does not involve the occupational standards which are in force in many industrialized country. Stressing on the inadequacy of incentive policies and institutions intended for increasing the employment, Kaya (1999) stated that the perception of vocational education would be changed by increasing the probability of being employed in case of graduation. Kaya (1999) underlined that one of the most important steps needs to be taken to make progress in vocational education is to ensure a more effective role assumed by the labor market and the sectors for designing the vocational education and involving in the education process.

Yörük, Dikici and Uysal (2002) evaluated the point in vocational education to be achieved by Turkey for being a knowledge society and shared their observations regarding obstructions. The primary problem observed is multiplication of grade points of a vocational high school graduate with a coefficient smaller than that of general high schools pursuant to a regulation enacted in 1998. The second issue underlined is the inadequacy of revolving funds obtained by production in vocational and technical high schools and competition with market getting even more difficult because of taxes and funds. Stating that the technological infrastructure of the settings where vocational education takes place is not adequate, the researchers stress on the necessity to apply policies encouraging the graduates to transit to higher education. Suggestions of the researchers according to their observations are as follow: updating of vocational curricula considering the needs of sectors, increasing of revolving fund revenues, reduction of taxes and funds on income to increase the share of students in revolving fund revenues, and increasing the quota for transition from the vocational schools to academic faculties.

Gündüz and Beşoluk (2008) compared trends in education and vocational education at secondary education level and as well as education policies of Turkey. Stating that secondary education has a dual nature because students choose one of two career paths, namely vocational and general education, the researchers mentioned that vocational education has a subordinate role. It is also stated that the role of vocational education in national development is not understood enough, thus there are no equal opportunities in education policies, and the resulting perception affects vocational education adversely.

Adıgüzel and Berk (2009) examined the opinions of vocational high school teachers on the modular structure of vocational education at secondary level. The data obtained from 20 vocational high school teachers participated in the study pointed out the following: there is no adequate fit between the purpose and the content in some modules; educational settings are insufficient for effective implementation of modules; students, teachers and parents are not sufficiently informed about modular curricula; and work load on teachers is increased. The researchers suggested the following: cooperation with private sector to resolve the deficiencies of educational settings, taking into account not only the academic achievement of a student but also his/her interests and skills while selecting a branch within a field, and preparation of materials to make the modular system more accessible and recognizable for all stakeholders.

Explaining their observations on the current state of vocational and technical education, Uçar and Özerbaş (2013) interviewed with six instructors in two vocational colleges in Ankara. The researchers emphasized the need to reduce the number of students per classroom in vocational education, which is an area specifically focused on on-the-job training. These instructors stated during interviews that modular structure of the current curriculum is not up-to-date, sufficient educational infrastructure is not available for practical training, the cooperation between schools and businesses has become more effective with the Law No. 3308, and the quality of the teaching staff should be improved.

Tamer and Özcan (2014) conducted a survey study with vocational teachers, students engaged in internships, vocational education graduates and businesses graduates in order to assess the status of vocational and technical education in Turkey through the eyes of stakeholders. The study implies that the stakeholders think that vocational education is not given sufficient importance, the infrastructural problems of vocational education institutions should be eliminated, the internship period is sufficient but internship processes are not followed sufficiently, there are not enough number of qualified instructors, and importance should be attached to education of foreign languages where students are at the lowest level in terms of self-efficacy.

Erden Özsoy (2015) stated in his study examining the status of vocational education in Turkey that no qualitative increase in vocational education has been achieved yet, despite quantitative increase in the number of students and teachers in recent years. It is stated that open admission by vocational and technical high school graduates to higher vocational education programs deteriorates the quality of higher education. Referring some academic studies on vocational education, the researcher stated that students of vocational high schools do not find their education for their future jobs, and businesses think that vocational education graduates do not have adequate knowledge, skills and attitudes. It is recommended for solving the observed problems that workforce supply and demand should be rendered periodical and continuous, new departments should be opened in accordance with the needs, necessary methods for following up the graduates should be designed, necessary policies for changing the negative perception towards vocational education should be developed, employers should be encouraged to employ graduates, courses should become practice- and on-the-job training-based, and public sector involvement should be ensured by means of various incentives.

Kumru and Demirtaş (2015) evaluated the opinions of the students taking skills training in enterprises within the scope of vocational education. As a result of the study, the students stated that they attached importance to skills training and find it useful in terms of their professional development, and in some cases they experienced problems with instructors. The students stated that they were mostly able to practice what they learned in theoretical courses and that they were satisfied with the skills training and their expectations towards the process were met.

Günay and Özer (2016) examined the current status of vocational colleges, an important element of vocational education in Turkey in the 2000s, expressed the problems encountered, and offered solutions.

Observations and Suggestions

Researchers emphasized that the importance of vocational education has increased in many countries especially for the solution of the employment problem that emerged as a result of the 2008 global financial crisis. It is stated that the supply for vocational and technical high schools had moved away from demand, especially between 2008 and 2010, and there was a partial balance between supply and demand due to increasing demand for vocational education after 2010. The researchers recommended the following: create a supply by considering the demands of students to increase the quality of vocational education; ensure that employment is observed in opening vocational education programs and continue the tendency of opening programs according to occupancy rates in related programs; promote the bodies responsible for quality assessments on vocational education institutions; enable students to benefit from the On-the-job Training Program of İŞKUR; encourage the opening of foundation-based vocational colleges in organized industrial zones; enable students to benefit from KOSGEB's support programs for Entrepreneurship and R&D; ensure the active participation of vocational colleges in Erasmus+ programs; create opportunities for motivating vocational college graduates to complete undergraduate education, in addition to the existing Vertical Transition Examination; improve definitions of professions; improve the personal rights and qualifications of teaching staff and criteria for opening new vocational programs; and improve the relations of vocational education institutions with the labor market.

Yıldırım and Çarıkçı (2017) examined the status of vocational education and suggested a bureaucratic model for increasing efficiency in order for Turkey to successfully achieve the vision 2023.

Researchers, who stated that the quantitative increase in demand for vocational and technical education is not sufficiently reflected in the quality, presented a model that requires the cooperation of many stakeholders for a more effective education management. It is stated in this model that the Vocational Education Council should be reorganized as a board that supervises policy-making and implementation. It is recommended that the Council should be reorganized and provided with representatives from the public, business world, non-governmental organizations, and professional chambers; the Council should be provided with a structure working on a continuous basis rather than a few meetings per year; and the MoNE, YÖK, the Ministry Of Labour And Social Security, and professional chamber should have a legal status enabling to enquire the policies related to vocational and technical education.

Canbey Özgüler (2018) emphasized the determination of occupational competencies in making vocational and technical education more qualified and improving the employment conditions of young people. Referring the importance of determining in a short time the qualifications required from those working in vocational education fields, which has been already implemented in European and Far East countries, the researcher stated that specialized workforce can only be attained in this way.

Kavi and Koçak (2018) examining the current state of vocational and technical education in Turkey, has evaluated the feasibility of Scandinavian practices of vocational education in Turkey. Researchers emphasized the importance of encouraging private education institutions that offer vocational education opportunities and increasing cooperation with the private sector, and stated that the implementation of skill-weighted examinations in vocational education would benefit. It is emphasized that there is a need to empower local administrators in vocational education and to clarify and improve teacher training policies. Another important area of concern is the negative perception of society towards vocational and technical education. The researchers suggested continuous promotion with written and visual media and, if necessary, the renaming of institutions providing vocational education in order to make the perception of vocational education in the society positive

General Evaluation

The observations and suggestions presented by non-governmental organizations, educational platforms and academic research are evaluated together in this section, and the practices in line with the developments and suggestions related to observations are summarized in items.

- ***Sectors' engagement in policies for development of vocational education***

It appears that one of the common points of successful vocational education systems in the world is sectors' contribution to vocational education policies, which regarded as one of the important factors that will guide the vocational education in the future. Qualified education and enhances employment opportunities for vocational education graduates in Turkey depends on the development and improvement of the relationship established with the sectors. In this context, the steps taken accordingly are as follows: increase in the number of vocational and technical high schools established in organized industrial zones with the support of sectors, and increasing the number of cooperation and protocols with technocities and technoparks and enhancing their contents. The fact that the students are being trained in sector abroad for meeting the needs of the sector in accordance with cooperation practices with TİKA can be shown as a supportive application in this regard. The most important indicator of the engagement of the sectors in the education process is the practice that the best vocational education institution in each field is selected and transformed into an excellence center and the representative of the relevant sector is directly in charge of the education in that institution.

- ***Increasing the budget allocated for vocational and technical education***

Vocational and technical education is an area of education where significant investments are required due to on-the-job training, settings and material needs. By increasing the total budget allocated to vocational education to TRY 12.5 Billion in 2018 from approximately TRY 6.32 Billion 2013, it has become possible to renew educational settings significantly. The focus is to confer more responsibility and power on school administrations for determining the needs of their schools and thereby optimize educational settings. Despite the increasing number of students, the vocational and technical education budget per student reached TRY 7,609 in 2018 from TRY 3,916 in 2013.

Significant increases in data on total and per-student vocational education budget are consistent with the increase in the importance attached to vocational education in recent years.

- ***Breaking down social prejudices against vocational and technical education***

In Turkey, as in many countries, vocational and technical education has been regarded as subordinate area overshadowed by academic education. The negative perception of vocational education also affected the preferences of students, leading to the dissociation of student profiles, who chose vocational and academic education, over time. Promotional activities are being designed to convey necessary messages to prevent such dissociation and have the society understand that vocational and technical education also provides many opportunities for students just like academic education and it is important in terms of raising human resources contributing directly to Turkish economy in the short run. It is predicted that the preferences of students who are interested in vocational education and equipped with more information on the content, economic role and accompanying opportunities of vocational education will be directed towards vocational education.

- ***Improvement of revolving fund activities in vocational and technical education***

Market availability of and earnings from services and products produced within the vocational and technical education process are significant in terms of scholarships and supportive activities towards students. It has been identified that there are currently no revolving fund activities in many vocational and technical secondary education institutions, and that there are no income generated in many professional fields. Therefore, incentive policies have been initiated in order to realize revolving fund activities and increase the revenue obtained in vocational education institutions. The existence of revolving fund activities and revenue generation are identified as important elements within the scope of Institutional External Quality Assessment. Furthermore, it was decided within the scope of the 2023 Education Vision to reduce the treasury cuts in the revolving fund revenues of vocational and technical education institutions. This is important in terms of providing the return of the revolving fund revenues to the students at higher rates.

- ***Data-based monitoring of human resources raised by sector needs***

The main element of ensuring that vocational education is qualified and graduates have comprehensive employment opportunities is the monitoring of sectoral human resource needs based on data. Employment opportunities to be offered to graduates of vocational and technical education are embodied by taking into consideration the needs of the sectors while determining which fields and branches are to be taught within the scope of vocational education and setting the quotas for these fields and branches. For this purpose, analysis studies have been started to determine which sector representatives need human resources with which skills they need at which time intervals. In accordance with the results to be obtained, the fields and branches of vocational education will be identified again, new fields and branches will be opened if necessary, and quotas will be set according to these data.

- ***Improving the field experience of teachers providing vocational and technical education***

The practical structure of vocational education requires that teacher-student interaction is at the highest level, which brings the quality of teachers to a more important point. In order for teachers to provide more qualified education, they need to be aware of the developments and methods in their fields within the scope of their specialization and they should be able to incorporate these methods and developments into the education process. In this perspective, the number of resources that teachers can provide their vocational and pedagogical development is being increased through in-service trainings, graduate studies, intensified sector visits and projects to be restructured in line with the 2023 Educational Vision.

- ***Development of projects with the World Bank, European Union and other overseas institutions***

Efforts are underway to increase the number of projects carried out in order to follow up global trends in vocational education and to enable students, teachers and managers to improve their vocational education abroad. Activities are being carried out to improve vocational education and value added is provided along with many global and national education stakeholders.

Businesses operating abroad through TİKA have been provided with the possibility of providing human resources by means of vocational education, and thereby students and graduates have been provided with overseas employment opportunities.

- ***Transition to modular system***

It has been stated that the transition to the modular system in the vocational education process could provide flexibility to students and teachers and is an important opportunity for lifelong learning and education of disadvantaged students. However, it is stated that in the current situation the expected efficiency of the modular system cannot be achieved, the aim-content compatibility in some modules should be improved, and the recognition of the modules is not sufficient. It is planned that the contents of the modules will be rearranged in a way to get the contribution of businesses in different sectors.

- ***Internship programs to reach the required qualification***

All education activities carried out within the scope of internship and workplace training are a prerequisite for students to receive a qualified vocational education. The responsibilities of schools and enterprises are increased in order to monitor the roles and development of students in the internship processes. The weight of field-based courses has been increased in all vocational and technical education institutions thanks to the updated curriculum. Internship and on-the-job training settings and options offered to students are enriched with new enterprises and settings such as technoparks, technocities, etc. In addition, the number of schools established in organized industrial zones is increased, so the number of students who are engaged in on-the-job training in businesses is increasing.

- ***Improvement of vocational guidance and counseling services***

In Turkey, vocational guidance and orientation activities in Turkey have long been carried out for academic programs and higher education. The increase in the importance of vocational education on a global scale and the enrichment of employment opportunities indicate that the perception of vocational education among students has began to change. In the current situation, guidance on vocational and technical education is not as effective as required, and sufficient information about career opportunities available to vocational education students cannot be furnished.

As part of guidance in every school across Turkey, informative practices about career and employment opportunities raising awareness of vocational education will take place.

- ***Distance education and lifelong education processes within the framework of vocational and technical education***

It is clear that the target group of vocational and technical education is not only limited to students in secondary education, but should be accessible to all individuals wishing to acquire vocational skills. Regardless of age and living conditions, the Open Vocational High School and Vocational Education Centers providing formal education have been providing every concerned individual with vocational education services. The conditions of being older than 18 and not married to be eligible for registration to Vocational Education Centers has been removed as of 2017 so as to enhance the accessibility of vocational education. Furthermore, the provision of education in a modular system enables individuals to shape their education in line with their interests.

- ***Other developments***

Since mentioned in reports and academic studies, the following practices have been abolished to enhance the quality of education.

- ***Weighting grade points of vocational high school graduates with coefficient 0.3***

Thanks to a decision taken by YÖK in 2009, the procedure of multiplying the grade points of general and vocational high school graduates by the coefficients of 0.8 and 0.3, which had been followed until that year, was abolished.

- ***The right of vocational high school graduates for open admission to vocational colleges***

Thanks to a decision taken by YÖK in 2017, the procedure allow open admission of vocational high school graduates to vocational colleges, which had been followed until that year, was abolished

5

Outlook of Vocational and Technical Education in Media (2018)

5.1 Technology Success the Robotics Club of Halit Narin Vocational High School

Milliyet • May 29, 2018.

The Robot Club of Halit Narin Vocational and Technical Anatolian High School in Çerkezköy of Tekirdağ, sponsored by TREDAŞ, has achieved successful results in the 12th International MoNE Robot Contest.

As part of the Project "Uyumlu Eşitlik Güçlendirir" sponsored by Thracian Electricity Distribution Inc. (TREDAŞ), 2018 International MoNE Robot Contest that the Robot Club of Halit Narin Vocational and Technical Anatolian High School joined was held in Sivas.

In the competition held in 12 different categories, 4 thousand participants fought hard to be the first in their categories. The Robot Club of Halit Narin Vocational and Technical Anatolian High School became the 64th among 600 robots in the Line Following Robot Category. As for the Mini Sumo category, 3 robots of the club remained in the quarterfinals.

5.2 Selçuk Yusuf Arslan Receives The Global Teacher Award For 2018

Memurlar.net • September 22, 2018

Mr. Selcuk Yusuf Arslan, an Information Technologies Teacher of Ankara Altındağ Atatürk Vocational and Technical Anatolian High School, was selected among 54 thousand people and was awarded the teacher of the year by India-based AKS Education

After the positive outcome of his application, Information Technologies Teacher Selcuk Yusuf Arslan attended the ceremony in New Delhi on September 16, 2018 and received the Global Teacher Award. This award was given to the teachers from 12 different countries.

AKS Education is an India-based educational management agency with representative offices in many countries, providing counseling services to 6000 education institutions. It has been organizing a reward program for school administrators and teachers in India since 2016. The award program was opened to all teachers around the world in 2018.

Mr. Arslan said "It is really a pride that your studies as a teacher are valued on the international platform. Last week I took part in the majestic award ceremony in India's capital, New Delhi, and received the global teacher award.

I was also a speaker at a panel on Teachers and Multi-Competence. My story was highly admired by Indian teachers. In recent years, Turkish teachers have begun to achieve significant success in international competitions. And, I am very happy to contribute to my country with this award and other international awards I have won. As teachers we have a duty to motivate our students but we need motivation too. In this sense, this award will be my inspiration for my new works."

Selcuk Yusuf ARSLAN won the first place Educator Challenge competition in Global Education Exchange Conference held in Canada last year, second place in the Space Awareness competition organized by the European Commission, and the second place in the STEM competition organized by the European School Network; and Yusuf Arslan Selcuk demonstrated success of representing Turkey along with his students in many international organizations . His students have won awards in more than 20 national and international project competitions. Also, he was selected Teacher of Wonders by Microsoft and the Most Outstanding Teacher of the Year by the Best in Education.

5.3 MoNE Announces The Vocational High Schools With The Highest Production

Anatolian News Agency • September 24, 2018

The list of 50 vocational and technical Anatolian high schools and vocational education centers affiliated with the MoNE with highest production in 774 revolving fund enterprises was published.

Ministry of National Education (MONE) published the Vocational and Technical Anatolian High Schools and Vocational Education Centers with the highest production.

In the list of MoNE Vocational and Technical Education General Directorate published at “http://mtegm.meb.gov.tr/” the names of 50 vocational and technical Anatolian high schools and vocational education centers affiliated with the MoNE with highest production in 774 revolving fund enterprises took place.

The Ministry also published the production totals in 81 provinces belonging to schools as a separate list.

Last year, vocational and technical Anatolian high schools and vocational training centers in 81 provinces had generated around TRY 217 million of income from this production.

5.4 Two Ministries put Vocational Training in OIZs on the table

Anatolian News Agency • September 28, 2018

The Ministry of National Education and the Ministry of Industry and Technology initiated an action to strengthen and improve the current status of vocational and technical education institutions in the Organized Industrial Zones. At the first meeting with the highest level of participation in the Ministry of Industry and Technology, it was decided to carry out all the processes in the field of vocational education in OIZs jointly.

A meeting was held at the Ministry of Industry and Technology as part of this action. The following topics were discussed: efficiency of cooperation between existing sectors and vocational education institutions in OIZs, problems and improvement areas of existing vocational and technical Anatolian high schools and vocational education centers, and new potential educational institutions. All processes were decided to be carried out jointly.

In OIZs, there are 70 vocational and technical education institutions, 37 of which are vocational and technical Anatolian high schools and 33 are vocational and technical Anatolian high schools affiliated with the MoNE. Currently, there are 309 Organized Industrial Zones throughout the country.

The first meeting held in the Ministry of Industry and Technology was attended by the following people: Hasan Büyükdede, Deputy Minister of Industry and Technology; Mahmut Özer, Deputy Minister of National Education; Ramazan Yıldırım, General Director of Industrial Zones; Kemal Varım Numanoğlu, General Director of Vocational and Technical Education; Zübeyde Arslanoğlu, Head of Department for Science, Technology and Industry Education; Şennur Çetin, Head of Department for Social Partners and Projects; Recep Altın, Head of Department for Education Policies, and various specialists.

5.5 Great Contribution To The Economy From A School Just Like A Factory

Anatolian News Agency • October 1, 2018

Production of the Vocational and Technical Anatolian High School, which was established in Batman in 1968, contributed TRY 5.5 million to the national economy Production of the Vocational and Technical Anatolian High School, which was established in Batman in 1968, contributed TRY 5.5 million to the national economy Students studying at Batman Vocational and Technical Anatolian High School are putting their class education into practice in workshops.

Processing the raw materials coming to their workshops, students supply all the schools in Batman and some schools in neighboring provinces with tables, chairs, desks, teacher lockers, bookshelves, libraries, benches, garden and stair railings, etc. they need. Practicing in workshops what they learn in classrooms, students get minimum wage for their work and also contribute to the national economy.

The first of Turkey

Batman Vocational and Technical Anatolian High School, affiliated with the VTEGD of the Ministry of National Education, was the school that contributed the most to the national economy with its TRY 5.5 million production in its revolving fund enterprise. Mr. Mahmut Kurtaran, the Provincial Director of National Education, pointed out the importance of vocational and technical high schools in his statement to AA correspondent.

Indicating that vocational education strengthens the national economy, Mr. Kurtaran said " Batman Vocational and Technical Anatolian High School has become the school with the highest turnover last year among the MoNE schools having revolving funds." Our school has performed very well in this sense. There is another meaning for this turnover, which also shows the skills training that our students receive from here."

Providing education for 50 years

The principal of the school, Mr. Necati Tunç, stated that the school has been in service since 1968 and its revolving fund enterprise has been established in 1983, and that they have the honor of being the first of Turkey in this area after 35 years.

Stating that 1600 students in 7 departments are provided with education in the school, Mr. Tunç said they are pleased to rank first of Turkey in terms of revolving funds. Stating that their revolving fund enterprise has been producing in 3 areas within the scope of revolving fund, Mr. Tunç said "Our students receive minimum wages so they contribute to their family budgets, and also gain work experience. The most important of all is that the school has very good technical equipments required by our country and it has been contributing to technical staff education."

100 percent domestic production

Stating that the school produces with its own teachers, students and staff, and that supplying the schools not only in Batman but also in surrounding provinces with supplies they need, Mr. Tunç said "Thus, we do not pay outside the school and support our President's call for nationalization."

Mr. Muzaffer Çelik, Technical Assistant Manager in charge of workshops, said that the revolving fund enterprise of the school contributed to the country's economy by making such a large production for the first time.

Stating that they produced various supplies for the Provincial Directorate of National Education in early days of their revolving fund enterprise, Mr. Çelik said "In recent years, however, we have started to meet the needs of all schools in the city center and districts. Recently, we produced 6 thousand sets of tables and desks for Şanlıurfa. We sent school supplies to Diyarbakır's Kulp district, Bitlis, and Tatvan."

Mr. Habib Özdemir, one of the students, stated that they practice what they learn in school, and they contribute to their families with their earnings, he also expressed the happiness of making production.

5.6 National Qualification Assessment On Vocational Education

Anatolian News Agency • October 3, 2018

The compatibility of the curricula applied by vocational high schools and vocational education centers were discussed in detail, and 22 branch curricula of vocational education centers were decided to be updated.

The Ministry of National Education (MONE), the Ministry of Family, Labor and Social Services and the Vocational Qualifications Authority (MYK) discussed the compatibility between all curricula applied by vocational high schools and vocational education centers with approximately 1.5 million students and the National Occupational Standards and National Qualifications.

A meeting were held in the MoNE with the relevant stakeholders on the steps to be taken for the compatibility between all field and branch curricula applied by vocational and technical Anatolian high schools and vocational education centers affiliated to the Vocational and Technical Education General Directorate and the National Occupational Standards and National Qualifications. Representatives from the MoNE, the Ministry of Family, Labor and Social Services, and VQA attended the meeting. In the meeting, it was determined that the current national occupational standards and national qualifications have been reflected to each curriculum of 54 fields and 199 branches applied by vocational and technical Anatolian high schools, and there is no need for an update in this sense.

On the other hand, at the meeting during which the education in vocational education centers was reviewed, it was identified that the National Occupational Standards and the National Qualifications (161 NQ) have been reflected to 27 field and 118 branch curricula out of 27 field and 140 branch curricula offered in vocational education centers, but the other 22 branch curricula needs to be updated. MoNE and VQA representatives decided to "work together and complete these updated until the end of October".

The following people attended the meeting: Mahmut Özer, Deputy Minister of National Education; Ahmet Koca, Deputy Minister of the Ministry of Family, Labor and Social Services; Kemal Varın Numanoğlu, General Director for Vocational and Technical Education; Adem Ceylan, Head of Vocational Qualifications Authority; Şennur Çetin, Recep Altın, Belma Güngör, Halil İbrahim Kahraman, İsmail Güler, Süleyman Akgül, Yusuf Çidem, Ertuğrul Gergil, M. Salih Canbal, Department Heads in Vocational and Technical Education General Directorate, and Osman Seçkin Akbıyık, Mehmet Ordukaya and Yaprak Akçay Zileli Department Heads in the Vocational Qualification Authority.

5.7 SERÇEV, A Distinctive High School, Selected As The World's First

Anatolian News Agency • October 8, 2018

The World Cerebral Palsy Day Awards of "the best project of 2018" in the field of education went to a project of SERÇEV Barrier-Free Vocational and Technical Anatolian High School affiliated with the Ministry of National Education (MoNE) among 75 countries. As part of the World Cerebral Palsy (CP) Day activities held on October 6, projects developed in this field from many countries of the world are evaluated every year and awards are given under the "best of the year" categories. In this year's 2018 World Cerebral Palsy Day Awards in Australia, projects from 75 different countries were presented. In this context, SERÇEV Barrier-Free Vocational and Technical Anatolian High School affiliated with the Ministry of National Education received the best project award in the field of education in 2018.

"The first and only school in this field"

Mr. Mahmut Özer, Deputy Minister of National Education responsible for vocational and technical education, stated that SERÇEV Barrier-Free Vocational and Technical Anatolian High School has been carried into effect within the framework of a protocol by and between the Ministry of National Education and SERÇEV, and that it is the first and only school in this field in Turkey. Stating that the school has been providing education in the fields of radio & television, information technologies, and agriculture and that he is very happy with the school's worth of such an award on cerebral palsy, Mr. Özer expressed his gratitude to the SERÇEV Association for Children with Cerebral Palsy, which contributed to the implementation of the project.

Mr. Özer congratulated the school administrators, teachers and employees for the success of the high school, and said "we are working to increase the number of this model, which is also successful in the international arena. We will share the good news about this issue with the public."

Distinctive education by the high school

The curricula of SERÇEV Barrier-Free Vocational and Technical Anatolian High School have been prepared in the form of modular programs taking into account individual characteristics.

In the school, the capacity of which is 200 cerebral-palsy students and 200 normally-developed students, cross-mainstreaming education is provided within the common area. Providing education in the fields of radio & television, information technologies, agriculture (greenhouse), the high school contains 32 classes, 11 workshops, 2 classrooms, 2 laboratories, 1 library, 1 parents waiting room, 1 sports hall, 1 conference room, a Learning-by-Experiencing Home, and 8 greenhouses. All spatial details and informatics products of the school were selected and designed specifically for individuals with cerebral palsy.

5.8 Students With Disabilities Are Learning A Profession In This High School

Anatolian News Agency • October 10, 2018

In MoNE SERÇEV Barrier-Free Vocational and Technical Anatolian High School, winning the best educational project award from the World Cerebral Palsy Day Organization, students are preparing for their future professions by cross-mainstreaming.

In MoNE SERÇEV Barrier-Free Vocational and Technical Anatolian High School, winning the best educational project award from the World Cerebral Palsy Day Organization among 75 countries, students are preparing for their future professions by cross-mainstreaming, while they are socializing at the same time. In SERÇEV Barrier-Free Vocational and Technical Anatolian High School, where education started last year within the scope of a protocol concluded by and between the Ministry of National Education (MoNE) and the Association for Children with Cerebral Palsy (SERÇEV), cerebral-palsy students are provided with vocational education within the same setting with normally-developed students as part of cross-mainstreaming. Thus, it is aimed that students with disabilities have a profession.

Ms. Dilek Saran, the principal of SERÇEV Barrier-Free Vocational and Technical Anatolian High School stated that the school provided cerebral-palsy students with education in the fields of agriculture, information technologies, and radio & television, and that cerebral-palsy and normally-developed students are educated together in the mainstreaming classes of the school.

Stating that the school has been designed to improve the accessibility of students with disabilities, and to provide them with areas of freedom, Ms. Saran said "our objective in this school is to enable our children with cerebral palsy to participate in employment by obtaining a vocational high school diploma. We want to see that we achieve our objectives in time and our children are employed in different professional fields."

"We received the best project award"

Reminding that the school has been awarded in World Cerebral Palsy (CP) Day organized in Australia on October 6, Ms. Saran stated that SERÇEV Barrier-Free Vocational and Technical Anatolian High School has won the best project award of year 2018 in education field among 75 countries. Stating that there are 20 students receiving special education in the school, Ms. Saran said "we have 20 special-education students, 14 of which is in 2 mild-level classes of the school and 6 in the medium-heavy-level classes. Moreover, we have 60 mainstreaming students and 103 normally-developed students. Our children are educated in the school, side by side, getting together and socializing. They all continue their education happily."

5.9 Africa Initiative In A Vocational High School

Yeni Şafak • October 13, 2018

The Ministry of National Education provides education with 272 teachers in 20 areas and 25 countries with inadequate vocational education, including Africa and Turkish states. More than 4 thousand students were educated as part of the joint action conducted with TİKA.

As part of the collaboration between the Ministry of National Education (MoNE) and TİKA, vocational information and new technologies will be taught to the disadvantaged countries. The Ministry assigned 272 teachers to 25 countries for education purposes. To date, 4 thousand 115 people have been trained in 20 different professional fields. Furthermore, workshops and laboratories will be established at vocational education centers opened by TİKA.

Support to Investments

Stating that Turkey wants to use actively its vocational education potential in other countries as well, the Deputy Minister of National Education Mr. Mahmut Özer said "In particular, we want to support the foreign investments of our businessmen. In order to meet the need for qualified labor in the countries where they invest, we want to support the education of vocational staff in vocational education centers established or to be established by TİKA in those countries. Furthermore, we will enhance vocational and technical education cooperation with the countries in which our country cooperates. So, we will share our experience, exchange students and teachers, and mutually carry out trainer training activities." Emphasizing the great potential of Africa in vocational education in particular, Mr. Özer said "considering our companies that make significant investments in Africa, we are working on a project 'to Create and Develop a Turkish-African Information Transfer Ecosystem of Vocational and Technical Education."

Countries and fields:

Countries where the Ministry of National Education provided education: Afghanistan, Palestine, Azerbaijan, Turkmenistan, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Pakistan, Yemen, Sudan, Mongolia, Jordan, Bosnia- Herzegovina, Moldova, Madagascar, Senegal, Tanzania, Cameroon, Zambia, Togo, Belize, Chad, Guinea, and Djibouti. Fields of vocational and technical education: Construction technology, installation and air conditioning, motor vehicle technology, agriculture, textile technologies, clothing production technology, food & beverage services, accommodation and travel services, industrial automation technologies, jewelry technology, ceramic and glass technology, computer technology, graphic design, furniture and interior design, metal technology, machine technology, electric-electronic technology, handcraft technology.

5.10 New Era In School-Sector Cooperation In Tourism

Anatolian News Agency • October 15, 2018

As part of the protocol signed by Mr. Ziya Selçuk, the Minister of National Education, and Mr. Mehmet Nuri Ersoy, the Minister of Culture and Tourism, the first schools that will carry out skills training in real tourism establishments were identified. The first schools that will carry out skills training in real tourism establishments were identified in accordance with a protocol between two ministries signed by Mr. Ziya Selçuk, the Minister of National Education, and Mr. Mehmet Nuri Ersoy, the Minister of Culture and Tourism.

In order to ensure that the students who are studying in the field of tourism are educated to meet the qualified labor need of the sector and to increase the field competencies of the teachers, the VTEGD has initiated a collaboration with Maxx Royal and Voyage Hotel.

In this context, first of all, the students of Ankara Çankaya İMKB Vocational and Technical Anatolian High School, Antalya Muratpaşa Falez Vocational and Technical Anatolian High School, and Aydın Kuşadası Güvercinada Vocational and Technical Anatolian High School will take their skills training in these hotels, in real service and production environments.

Target is at least two foreign language

The "Protocol for Cooperation in Developing Vocational and Technical Education" signed last month by Mr. Ziya Selçuk, the Minister of National Education, and Mr. Mehmet Nuri Ersoy, the Minister of Culture and Tourism on behalf of the two ministries envisages students having skills training and internship practice in the real service and production environments, restructuring of the education of tourism high schools determined for the purpose of raising qualified workforce needed by the tourism sector, and continuous in-service and on-the-job training programs for school educators and administrators.

It is aimed that the students in the schools covered by the protocol will graduate by learning at least two foreign languages and the teachers will increase their professional development. In addition, it is expected that employment of the graduates of these schools in the tourism sector would contribute to the development of the sector. 65 thousand 258 students are studying in schools affiliated with the VTEGD, and 11 thousand 507 students are in the field of accommodation & travel services and 53 thousand 751 are in the field of food & beverage services.

5.11 MoNE Launches Wooden Toy Production in Vocational Education Institutions

Anatolian News Agency • October 17, 2018

The Ministry of National Education (MONE) has taken an important step in the design and production of wooden toys, which are mostly imported, in vocational education institutions. Wooden toys can now be produced in vocational and technical education institutions engaged in production in the field of furniture and decoration. Ankara Altındağ Siteler Vocational Education Center was selected for pilot application. Siteler Vocational Education Center had been the second school with the highest production in 2017 among 774 vocational and technical education schools in Turkey within the scope of revolving funds.

New innovative approaches will be developed

Deputy Minister of National Education Mahmut Özer stated that they attach a great importance to this project. Emphasizing that the objective of the pilot project is to raise awareness of wooden toy design and production in Turkey and promote wooden toy applications, Mr. Özer said "We want to develop new innovative approaches to support child development. Thus, one of our aims is to develop and enhance wooden toy design and production."

Pointing out that they want to support practices that will reduce screen addiction of children and improve their creativity, Mr. Özer said "In this context, we will also cooperate with the universities engaged in wooden design and production. We will extend the pilot project to other production centers in our vocational and technical schools."

A national contest will be organized

Stating that the Ministry aims to organize a national wooden toy design contest after popularizing wooden toy design and production, Mr. Özer said "All these efforts will lead to new initiatives and encourage the emergence of new projects."

Meanwhile, Deputy Minister of National Education Mr. Mahmut Özer visited Siteler Vocational Education Center, which was chosen pilot school, and got information from the officials. Deputy Minister Özer was accompanied by Kemal Varın Numanoğlu the General Director for Vocational and Technical Education, Süleyman Akgül, Head of

Department for Workplace-based Vocational Education, Turan Akpınar Ankara Provincial National Education Director, and Zülkarneyin Avcı, Altındağ District National Education Director.

The wooden toy market in the world is growing steadily

Emphasizing the importance of games for children's development, experts warn that healthy toys that will develop children's

mind and hand-muscle skills should be chosen. Some plastic toys sometimes become contention because some materials and paints used are not healthy. The global market of wooden toys, regarded as a healthier, more durable and safer alternative to plastic toys, is growing.

5.12 Traditional Turkish Arts Vocational High School Being Founded in Istanbul

Anatolian News Agency • October 22, 2018

Traditional Turkish Arts Vocational High School is being founded in Istanbul to offer education in this field for the first time as part of the "Cooperation Protocol to Hand Down Traditional Turkish Arts To Future Generations" signed by Mr. Ziya Selçuk, the Minister of National Education and Mehmet Nuri Ersoy, the Minister of Culture and Tourism.

According to the information received by an AA correspondent from the Ministry of National Education (MoNE), the lack of such education at the secondary level was considered a major deficiency in the transfer of these arts to future generations, given the work in recent years in the fields such as calligraphy, marbling, miniature craft, tile art, ornamentation, hand-carving, binding, wood engraving, paper and leather carving, weaving, etc.

Traditional Turkish Arts Vocational High School, which will be the first school in this field, is going to be opened in Istanbul.

The curriculum and course contents of the high school were discussed at the first meeting. At the meeting where the workshops to be established were evaluated, it was decided to establish vocational education center together with vocational high school.

The second meeting will be held in November

The following persons were invited to the meeting: Hikmet Barutçugil, Fuat Başar, Alparslan Babaoğlu, Uğur Taşatan from marbling; Ayşe Özkan, Güvenç Güven, Nursen Güventile art; Dürdane Ünver, Meryem Güney, Ersin Yıldızhan from paper and leather carving, Mustafa Çelebi, Münevver Üçer, Mamure Özornamentation; Hüsamettin Yivlik from wooden engraving; İslam Seçen, Melike Kazazfrom binding; Gülçin Anmaç from miniature craft; Davut Bektaş, Faruk Eratlı, Ömer Faruk Özoğul from calligraphy; Kaya Üçer, Semih İrteş from hand-carving, and Recep Karadağ from weaving.

The meeting was held with the intense participation of artists and attended by the following: Deputy Minister of National Education Mahmut Özer, General Director of Vocational and Technical Education Kemal Varım Numanoğlu, Head of Department of Curricula and Instructional Materials Mehmet Salih Canbal, Head of Department of Social Partners and Projects Şennur Çetin, Istanbul Provincial National Education Director Levent Yazıcı, irector of Sabancı Maturation Institute Yusuf Gürlek, İlkay Belibağlı, Müşfika Akbulut ve Derya Adıgüzel The second meeting on the establishment of the high school is scheduled for next month.

5.13 MoNE Will Establish Centers Of Excellence In Vocational Education

Anatolian News Agency • October 24, 2018

After Mr. Ziya Selçuk, the Minister of National Education, announced the 2023 Education Vision, the Ministry of National Education (MoNE) has launched an important project to improve the quality of vocational and technical education. As part of the project, important steps will be taken to establish 20 centers of vocational education excellence throughout the country, to support teachers' professional development and to promote vocational education.

According to the information received by an AA correspondent from the MoNE, the process to establish centers of excellence in vocational and technical education has started.

As part of the project, which is planned to be completed in three years, 10 centers of excellence will be established in the strongest areas for which vocational and technical education is provided, and education support will be provided. Additional 10 excellence centers are planned to be activated by means of grants for completing the project. Therefore, when the project is completed, 20 excellence centers will have been established and activated in the field of vocational and technical education. In these centers of excellence, educational focus will be on practice and it will be ensured that students will attain the skills demanded by the sector.

MoNE will use these centers of excellence for professional development training of teachers of vocational and technical secondary education institutions and training of educators coming from abroad.

Industry 4.0 approach to educator training

As part of the project, occupational teachers will be provided with on-the-job training in Turkey and EU countries, and 3 thousand and 250 vocational teachers will be provided with training on preparation and development of educational materials where new techniques are used in 3D modeling supporting Industry 4.0.

The mathematics and science competence of 800 mathematics and science teachers working in vocational and technical secondary education schools will be enhanced. The project will also enable vocational and technical education institutions to cooperate with SMEs within the scope of R & D activities for Industry 4.0.

Vocational and technical education will be promoted and awareness will be increased

As part of the project, vocational education will also be promoted. In this context, vocational guidance will be given to students, teachers and parents. Technical visits to industrial centers and production centers will be held in selected 25 provinces, and forums, conferences, meetings and information days will be organized to raise awareness on vocational and technical education.

Media and communication tools will be developed for the promotion of vocational and technical secondary education. Information and skills competitions and exhibitions will be organized between vocational and technical secondary schools. Also education-sector consultations will be held.

5.14 Elevator Academy Opened at Vocational High School

Milliyet • October 26, 2018

Turkey's first Elevator Academy has opened in Yenimahalle Şehit Mehmet Şengül Vocational and Technical Anatolian High School in Ankara in cooperation with the Ministry of National Education and the Elevator Industrialists Federation. High-tech workshops were established in order to enable students and teachers to carry out practical courses in a real production setting.

Turkey's first Elevator Academy has been established in Yenimahalle Şehit Mehmet Şengül Vocational and Technical Anatolian High School. New technologies in elevator systems were introduced to Vocational and Technical Anatolian High Schools for the first time in Turkey by means of a "Cooperation Protocol on Vocational Education" signed in March 28, 2018 by and between the Vocational and Technical Education General Directorate of MoNE and ASFED. As part of the protocol, it was decided that an Elevator Academy would be established by ASFED to the following places in order to enable teachers and students to conduct educational activities in real production and technology settings: Yenimahalle Şehit Mehmet Şengül Vocational and Technical Anatolian High School, Eskişehir Tepebaşı State Supply Office Vocational and Technical Anatolian High School, and Kayseri Kocasinan Ayşe Baldöktü Vocational Education Center.

The first Elevator Academy, composed of 6 workshops, has been established in Yenimahalle Şehit Mehmet Şengül Vocational and Technical Anatolian High School in Ankara with the support of Merih Elevators, AKE Elevator System, and ARKEL affiliated with the Federation. In order for students and teachers to practice in real production settings in the academy, the following have been established: Elevator Cabin and Floor-Door Assembly Workshop, Well Assembly Workshop, Hydraulic-Pneumatic and PLC Workshop, AKE Moving Stairway and Rail Systems Workshop, ARKEL Control Panel and Electrical Systems Workshop, and a training room.

The Elevator Academy inaugurated with the participation of Mr. Kemal Varın Numanoğlu, the General Director of MoNE Vocational and Technical Education, and sector representatives. Mr. Numanoğlu said in his statement related to Elevator Academy that all schools will be provided with necessary facilities to be able to meet the level of development of the sector, and the students and teachers will achieve necessary qualifications, which will be an important step on the way to the targets set in line with 2023 Education Vision.

Pointing out that the Board of ASFED and the relevant companies have given every moral and material support to education, Mr. Numanoğlu emphasized that the cooperation with the sector in vocational education will continue to increase.

5.15 Compliance of National Occupational Standards for Vocational Education Completed

Anatolian News Agency • October 31, 2018

A new breakthrough took place in vocational education, which had a special place in the 2023 Education Vision announced by President Recep Tayyip Erdoğan and Minister of National Education Ziya Selçuk. The MoNE has started a process about the compatibility between all field and branch curricula applied by vocational and technical Anatolian high schools and vocational education centers affiliated to the Vocational and Technical Education General Directorate and the National Occupational Standards and National Qualifications.

The compatibility studies were completed at the end of this month in all programs offered.

3 thousand 315 high schools were made compatible with the national qualifications

In this way, all of the curricula of 54 fields and 200 branches applied by 3 thousand and 315 Vocational and Technical Anatolian High Schools in Turkey were made compatible with the national occupational standards and national qualifications in force.

A total of 1 million 394 thousand 729 students are studying in Vocational and Technical Anatolian High Schools. On the other hand, national occupational standards and national qualifications in force were reflected to all 27 fields and 142 branch curricula of vocational education centers. Currently, 103 thousand 491 students receive vocational training at 323 vocational education centers.

National Occupational Standards demonstrates the minimum norm

The National Occupational Standard of an occupation demonstrates the minimum norm that shows the necessary knowledge, skills, attitudes and manners adopted by the Vocational Qualifications Authority for the successful execution of that profession. National Occupational Standards are published in the Official Gazette and thereby come into force.

The qualification level of the profession published in the Official Gazette is determined in accordance with the qualification levels adopted by the European Union and the European Qualifications Framework.

5.16 Era Of Collaboration With Technoparks In Vocational Education Starts

Anatolian News Agency • November 2, 2018

Noting that a cooperation protocol on "Improving Vocational and Technical Education by R&D Centers" has been signed by and between the MoNE Vocational and Technical Education General Directorate and ARI Technocity of Istanbul Technical University (İTÜ), Mr. Ziya Selçuk, the Minister of National Education said "vocational development training programs for teachers receiving vocational education in companies operating within İTÜ ARI Techncity will be contributed as part of the project" and continues as follows:
"As part of this protocol which is a breakthrough in vocational and technical education, vocational and technical education students will be enabled to practice their skills and have their internships in real production settings of many fields such as information technology, electronics, machinery and equipment manufacturing, energy, defense, and automotive."

Minister Selçuk stated that training programs for professional development of teachers receiving occupational training in companies operating within İTÜ ARI Technocity will be contributed.

"We put special emphasis on vocational education"

Minister Selcuk stated that the orientation towards R&D studies at the national level in vocational and technical education would be encouraged, and said "We put special emphasis on vocational education in 2023 Education Vision.

We are constantly working on the construction of a vocational education which updates itself continuously according to the priorities of our country and has a dynamic link with the sector. We will realize this construction process by using all the possibilities of our country. In this context, we believe that establishing the connection of vocational education with technoparks will provide us with a significant initiative.

This collaboration with ITU Arı Teknokent will contribute to the quality of vocational education and to the R&D capacity in vocational education through innovative approaches. This protocol is also of great importance as it is a breakthrough in terms of cooperation between vocational education and technoparks. I wish this cooperation would be beneficial and I thank those who contributed. Hopefully, we aim to make these collaborations with other technoparks, which are increasingly growing in our country."

"Nearly 50 thousand people are employed"

The objectives of Technology Development Regions established by Law No. 4691 published in 2001 are as follows: production of technological knowledge, commercialization of the knowledge produced, improving product quality and standard in the product and production methods, developing innovations that will increase productivity and reduce production costs, ensuring compliance of small and medium-sized enterprises with new and advanced technologies, providing job opportunities to researchers, and increasing the competitiveness of industry.

As from 2001, within the scope of this Law; as of September 2018; a total of 81 Technology Development Zones have been established, and 58 of the 81 Technology Development Zones continue to operate and the infrastructure works of 23 are ongoing.

More than 5 thousand companies are active in the technology development regions and close to 50 thousand people are employed in these companies.

5.17 MoNE Launches Corporate Quality Assurance System in Vocational Education

Anatolian News Agency • November 5, 2018

The Ministry of National Education established a quality assurance system in all vocational and technical schools in order to monitor institutional quality and improve the institutions on a continuous basis. All of the 3 thousand 469 vocational and technical education institutions having students have been subjected to institutional evaluation by the Ministry of National Education (MoNE) based on 7 themes and 70 indicators in 2017-2018 academic year. Themes such as the following were taken into account during the evaluation: the school's educational setting and infrastructure; the success, attendance and discipline of the students at school; guidance work carried out by the school; projects of the school and school-sector collaborations; social activities carried out by the school; school healthcare activities, and school administration. The evaluation report of the vocational and technical education institutions for the 2017-2018 academic year is planned to be published this month.

"We are establishing a quality assurance system for our schools"

Mr. Mahmut Özer, the Deputy Minister of National Education, spoke to an AA correspondent and said "We establish a quality assurance system for all of our vocational and technical schools."

Mr. Özer stated that firstly each school will prepare its own self-evaluation report, and that the report will contain evidenced-based information on each school's own resources and objectives in the identified themes, the process of achieving the objectives, how to improve these processes, and what they are doing for achieving the objectives.

Stating that the schools will be subjected to external institutional evaluation at certain intervals within the frame of their annual self-evaluation reports, Mr. Özer said
"Our primary aim here is to improve a quality culture in our schools and thus support them to improve their quality on a continuous basis. We will periodically publish reports for external institutional evaluation and increase the visibility of our successful schools with reports. We will also work on disseminating good practice examples to all of our schools."

5.18 MoNE Expands Technocity Collaboration Network in Vocational Education

Anatolian News Agency • November 8, 2018

A cooperation protocol on "Improving Vocational and Technical Education by R&D Centers" has been signed by and between the Vocational and Technical Education General Directorate of the Ministry of National Education (MoNE) and Istanbul Technocity of Istanbul University. Mr. Ziya Selçuk, the Minister of National Education, has announced that they started a cooperation with technocities in vocational education. In this context, for the first time across Turkey, signing a protocol on "Improving Vocational and Technical Education by R&D Centers" with İTÜ ARI Technocity, the Ministry started a cooperation with the Technocity of Istanbul University at the second phase. The cooperation has been initiated with the protocol signed by Prof. Dr. Kemal Numanoğlu, the General Director of MoNE Vocational and Technical Education, and Mr. Yasin Erol, the General Manager of Istanbul Technocity. Mr. Mahmut Özer, the Deputy Minister of National Education, and Prof. Dr. Mahmut Ak, the Rector of Istanbul University, attended the signing ceremony.

Teachers will be trained in technoparks

As part of protocols for cooperation with technoparks in vocational and technical education, vocational and technical education students will be enabled to practice their skills and have their internships in real production settings by means of cooperation with companies operating in many fields such as informatics, electronics, software, biomedical, biotechnology, machinery, energy, defense, and automotive.

As part of the cooperation in which occupational training of vocational education teachers are planned to be given in technoparks at certain intervals, the aim is to develop and strengthen the orientation towards R&D studies at national level in vocational and technical education.

6 International Relations in Vocational Education and Training

6.1 Activities carried out within the framework of the European Union

There are various activities carried out under different headings, especially in the field of vocational and technical education within the scope of the activities carried out with the European Union. These activities, where VTEGD actively participates in, are organized by the European Commission and/or the European Training Foundation (ETF).

Advisory Committee for Vocational Training (ACVT) The Advisory Committee for Vocational Training (ACVT), which is a permanent committee where top-level executives and social parties (Hak-İş, TİSK) are represented and aiming at contributing to determination of policies in vocational education and cooperation between countries, holds 2 meetings on average every year. VTEGD representing Turkey attends the committee meetings, which are of key importance in determining the vocational education policies of the European Commission.

Directors General for Vocational Training /DGVET Group of Vocational Education General Directors, a working group attended by general directors in charge of vocational and technical education, conducts 2 meetings on average annually in order to produce policies and closely monitor the current developments. The group furnishes a platform for decision makers and stakeholder representatives to discuss EU vocational education practices and new ideas in the field of vocational education.

Meeting of General Directors for Vocational Education and Training (DGVET) – Talin/Estonia

European Alliance for Apprenticeships / EAfA

The European Alliance for Apprenticeships, whose main objective is to strengthen the quality, supply and image of apprenticeship training in Europe and promote apprenticeship mobility,

Meeting of European Alliance for Apprenticeships (EAfA) - Budva/Montenegro

The meeting "Skills and Vocational Education in Southeast European Countries and Turkey" of European Training Foundation (ETF) – Belgrade, Serbia

came into force with a joint declaration by the European Social Partners, the European Commission, and the European Council. The platform brings together all key stakeholders, such as governments, businesses, social partners, chambers, vocational education and training providers, youth representatives and think tanks.

European Training Foundation (ETF) The European Training Foundation is a unit of the European Union that supports the countries surrounding the European Union to renew their education, training and labor market systems. The Foundation, supporting the nations' own education, training and labor market reforms, collaborates with Turkey in many different areas with an evidence-based approach. Collaborations in the field of education are usually carried out through joint workshops for exchange of views or by providing expert support on specific subjects. The highlights of the current studies are as follows:

- **Riga Decisions and Monitoring Process:** The 5 main medium term outputs covering the 2015-2020 period were determined as the main targets in the field of VET upon the Riga Decisions signed in 2015 between ministries responsible for vocational and technical education.

European Union 2020 Education - Meeting of Vocational Education Work Group Brussels/Belgium

Turkey has identified two of these five targets (supporting workplace-based learning and professional development of teachers) as priority areas of work. In this context, regular monitoring reports are prepared and various researches are carried out with the contributions (expertise support) of the European Training Foundation.

- **Turin Process:** It is a two-year study that began in 2010 and involves the analytical review of the status and progress of vocational education in the ETF partner countries, biennially, with the participation of all parties. The process has two main objectives: to obtain information on current policies and outcomes in participating countries and to promote sense of ownership, participation and reliance on evidence in policy making to improve the effectiveness of policies. At this point, the Turin Process has been terminated upon the 2016-17 report, whereas the preparations for the new Turin Process for 2019-2020 has started.

European Commission - Manufuture 2017 - 'Moving up the Value Chain' Conference - Tallinn/Estonia

European Quality Assurance in Vocational Education and Training (EQAVET)

The Platform for European Quality Assurance in Vocational Education and Training (EQAVET) brings together all EU members, candidate countries, European economic area countries, social partners and the European Commission in order to strengthen the quality assurance mechanisms of vocational education systems within the scope of the European Quality Assurance Reference Framework. The work of this platform continues as part of the efforts for quality in vocational and technical education.

6.2 Operations with Turkish Cooperation and Coordination Agency (TİKA)

The Ministry of National Education and the Turkish Cooperation and Coordination Agency (TIKA) conducts various activities in order to develop applications for vocational and technical education, ensure unity of curriculum and implementation, and transfer the knowledge and experience of the parties to each other by sharing new technologies and knowledge.

Operations Between MoNE and Japan International Cooperation Agency (JICA)

The Project of Establishment of the Field of Industrial Automation Technologies was implemented between 2002-2007 in İzmir Mazhar Zorlu Vocational and Technical Anatolian High School and Konya Adil Karaağaç Vocational and Technical Anatolian High School. In this context, 24 teachers received vocational training in Japan for 6-9 months, the curriculum and training materials were developed with these teachers and Japanese experts, and the two schools' workshops and laboratories were equipped by Japanese experts. Between 2002-2007, the field of industrial automation technologies was disseminated to 20 schools by means of the Project of Establishment of the Field of Industrial Automation Technologies. The workshops and laboratories of 20 schools were equipped, and 350 teachers received in-service training in İzmir Mazhar Zorlu Vocational and Technical Anatolian High School.

Project on Dissemination of Industrial Automation Technologies to Central Asian and Middle East Countries

Between 2013 and 2015, vocational teachers from 9 countries, namely Afghanistan, Azerbaijan, Palestine, Kazakhstan, Kyrgyzstan, Uzbekistan, Pakistan, Tajikistan, and Turkmenistan, were trained in industrial automation technologies in İzmir Mazhar Zorlu Vocational and Technical Anatolian High School with cooperation between MoNE, TİKA (Turkish Cooperation and Coordination Agency), and Japan International Cooperation Agency (JICA). 138 teachers received training in 15 courses, organized in basic, intermediate and advanced levels.

Protocol between MoNE and TİKA

Training staff are sent to various countries and training is provided in the requested fields within the scope of the "Protocol for Cooperation in Vocational and Technical Education" signed by and between MoNE and TİKA. Various trainings were given by 276 by Turkish teachers to 4,195 teachers from 26 countries in 19 occupations such as Information Technologies, Electrical-Electronics Technology, Handcraft, Industrial Automation Technologies, Clothing Manufacturing Textile Technology, Graphics and Photography, Beauty and Hair Care Services, Construction Technology, Accommodation and Travel Services, Jewelry Technology, Machine Technology, Metal Technology, Furniture and Interior Design, Motor Vehicle Technology, Ceramic and Glass Technology, Agriculture, Textile Technology, Installation Technology and Air Conditioning, and Food & Beverage Services.

The cooperation countries are as follows: Afghanistan, Azerbaijan, Belize, Republic of Bosnia and Herzegovina, Djibouti, Chad, Palestine, Republic of Guinea, Republic of Cameroon, Republic of Kazakhstan, Kyrgyzstan, Republic of Madagascar, Mongolia, Republic of Moldova, Republic of Mozambique, Republic of Uzbekistan, Islamic Republic of Pakistan, Republic of Senegal, Republic of Sudan, Republic of Tajikistan, United Republic of Tanzania, Republic of Togo, Republic of Turkmenistan, Hashemite Kingdom of Jordan, Republic of Yemen, and Republic of Zambia.

6.3 Operation under United Nations Development Programme (UNDP)

United Nations Development Programme (UNDP), Ministry of Environment & Urbanization, Global Environment Facility (GEF)

A Project on Energy Efficiency in Buildings was implemented between 2011 and 2017 in order to strengthen the legal and institutional structures, develop legislation and policies in line with EU practices, and introduce a holistic design approach in terms of energy performance for increasing the energy efficiency in buildings in Turkey and reducing the associated greenhouse gas emissions.

The energy-efficient school building and additions of Cezeri Yeşil Technology Vocational and Technical Anatolian High School in Etimesgut district of Ankara was constructed and started education in the field of Renewable Energy Technologies as part of a holistic building design approach based on the principle of sustainable energy.

7

2023 Vision in Vocational and Technical Education for a Better Future

In this section, a status analysis on our vocational and technical education system, prioritized problematic areas, and improvable areas are evaluated, and our actions that will take place in line with our goals given in 2023 Educational Vision of the Ministry are set forth (MoNE, 2018).

7.1 Status Analysis on Vocational and Technical Education

Vocational and technical education aims to prepare students for higher education or work life, if they want, in accordance with their interests, abilities, and temperament in a flexible structure as well as educating students as good citizens. In our country, vocational and technical education is provided in fields and branches aimed at various professions by Vocational and Technical Anatolian High Schools, Multi-Program High-Schools and Vocational Education Centers applying various curricula at secondary education level.

Social and economic structures are more active and inconstant due to the dynamism of the era. Individual preferences and the demands of the social and economic structure may not develop and intersect on the same plane. Even economic preferences may not match social demands. A more dynamic and flexible training system is needed to eliminate these threats by regulating these risk areas. Vocational and technical education is an important tool in reducing the impact of social crises as a result of the contraction of the economy and the decrease in employment. Developments in knowledge and technology affect professions and some professions disappear while new ones emerge. In this context, it became more important to ensure social and sectoral integration of education in order to increase efficiency and competitiveness in the economy.

Advances in science and technology directly affect vocational and technical education, and hence the methods and processes of obtaining a profession are beginning to differentiate. It is coming into prominence to provide individuals with necessary knowledge and skills required by a profession as well as competences for adapting to change, given the speed of changes taking place. In the sector, individuals' demand to gain basic competences as well as high-level skills on information and communication technologies in specific areas has become widespread along with the digitalization process in particular.

A vocational and technical education, planned in accordance with global developments, plays an active role in ensuring human-oriented development. Therefore, vocational and technical education must be accessible all who need, provide individuals with competencies appropriate to the conditions of the age in line with their interests and abilities, support individuals' entrepreneurship, teamwork, decision making, problem solving, ensure national and international recognition and mobility, and train individuals in a dynamic structure that can adapt to changing social and economic conditions.

7.2 Prioritized Problematic Areas

Limitations originating from the social perception of vocational and technical education

It is not possible to say that the social awareness of vocational and technical secondary education is adequate. Vocational and technical education is seen as a secondary education, and the social and economic value is attributed rather to the general secondary education and higher education. This perception prevents the successful students from choosing vocational education. In addition, the sector is not sufficiently involved in the vocational and technical education processes, and it does

not give priority to vocational and technical education graduates for employment, and no wage differentiation is applied based on vocational education areas and levels. Parents attribute more value to higher education, however, vocational and technical education graduates cannot show the expected success in transition to higher education. The visibility of sectoral cooperation protocols and project competitions at national or international level, in the form of good practice model models that can provide a positive social perception for vocational and technical education, is not at the expected level.

Limitations originating from the intensity of academic curricula

Common curricula at secondary education level is implemented in all ninth and tenth grades of all high school types, and the intensity of curricula increases when vocational courses is added on these academic courses in vocational and technical education institutions. The intensity of academic courses in these schools, the primary mission of which is to raise well-trained individuals in terms of vocational and technical skills, cause students to fail in the program and decrease in practice-based hours.

Limitations originating from transition to vocational higher education (associate and undergraduate)

Vocational and technical curricula are prepared and updated to respond to the existing and future needs of the labor market in accordance with the Turkish qualifications system and national occupational standards, but total integrity and continuity between vocational and technical secondary education programs and higher education programs cannot be achieved. Although the possibilities of lateral transfer between different programs of vocational and technical education are flexible, it appears that higher education does not benefit sufficiently from the graduates in this field. Therefore, there is a need for a structure that allows graduates of various programs of vocational and technical education to continue with higher education and considers basic education, vocational secondary education and vocational higher education with a holistic approach.

Limitations originating from study periods of fields and branches

The four-year duration of compulsory secondary education causes the study period of some fields and branches to be longer than they should.

Limitations originating from the monitoring and evaluation system intended for students and graduates of vocational and technical education

There is no assessment and evaluation system based on learning outcomes, based on objective criteria and data and providing feedback for policy-making. Furthermore, there is no system providing reliable data for vocational and technical education graduates.

Limitations originating from on-the-job training opportunities and possibilities for teachers

Due to the inadequacy of public financial resources and limited cooperation protocols with the sector, on-the-job training opportunities cannot be provided adequately to workshop and laboratory teachers involved in vocational and technical education.

Limitations related to opportunities and possibilities of cooperation with sectors

Vocational and technical secondary education institutions that need to have intensive interaction with the private sector appear not have sufficiently tight relationships with sector leaders in Turkey. Therefore, this interaction needs to be enhanced. It is observed that most graduates of vocational and technical education do not seek or manage to find jobs in their graduation areas. Considering the cost of vocational and technical education, this dilemma, beyond employment, decreases the investment efficiency of vocational education, which is expensive.

Limitations originating from the vocational guidance and career system

Vocational and technical education does not take into consideration temperament, abilities, and interests while

guiding students according to their academic achievements. There is no widespread professional skills assessment and guidance system that identifies vocational interests and abilities of students starting from basic education and guides students and their families accordingly. Moreover, there is no program structure in which students can explore their interests and abilities. Basic education does not include elective or compulsory courses that will assist in the orientation to vocational and technical education. The awareness of vocational education is underdeveloped since the services for orienting and guiding secondary education students to professions suitable for their interests and wishes and the courses such as Technical Training measuring knowledge and skills, developing finger skills, and arousing curiosity about professions were excluded from the framework program in 1997, and candidate apprentice and apprenticeship scheme were deteriorated thereby.

Limitations originating from the Structure of Technological Equipments in Educational Settings

Due to the insufficient public resources and the lack of sector support, the technological equipments of vocational and technical education institutions cannot be improved in line with the rapidly changing and developing technology.

Limitations originating from the lack of a national occupational map

In order to enable the production of international occupational data and help countries create a model for developing and revising their national occupational classifications, occupational maps should be issued. Efforts related to occupational maps in Turkey are not sufficient.

Legislative limitations to Revolving Fund Activities in Vocational and Technical Secondary Education Institutions

Production in vocational and technical education schools and institutions by means of practical training within the scope of revolving fund activities both contribute to the economy of our country and increase the quality and attractiveness of practical training. The advance deductions made in accordance with the legislation from the revolving fund enterprises in vocational and technical education schools and institutions prevent these enterprises from working effectively and relevantly.

Limitations originating from the nature of the foreign language service offered to students

The fact that the academic readiness of vocational and technical education students is not sufficient and that the foreign language programs are the same in all types of high school cause the student success to decrease.

Limitations of Professional Competence of Teachers

The priority problem areas are as follows: the nomination and adaptation training process, which affects teachers' commitment to the profession and the institution, starting from nomination; failure to establish the relationship between in-service training and career development system with teacher qualifications; and failure to associate existing practices with each other within the framework of system integrity.

7.3 Improvable Areas in Vocational and Technical Education Services

- Ensure that the sector is more involved in vocational and technical education processes,
- Give priority to vocational and technical education graduates for employment, and apply wage differentiation based on vocational education areas and levels,
- Increase the number of sectoral cooperation protocols and project competitions at national level in vocational and technical education,
- Reduce the academic course intensity of the Anatolian vocational program in vocational and technical secondary education institutions,

- Establish an integrated structure that will enable the transition of vocational and technical education graduates to higher education in their fields,
- Establish a structure to monitor vocational and technical education graduates,
- Increase on-the-job training opportunities for workshop and laboratory teachers involved in vocational and technical education,
- Strengthen sector-education cooperation by increasing cooperation opportunities between vocational and technical education and sector leaders,
- Establish a widespread professional skills assessment and guidance system that identifies vocational interests and abilities of students starting from basic education and guides students and their families accordingly,
- Include elective courses related to vocational orientation in 7th and 8th grades in order to activate the vocational orientation process of students,

- Certification of skills at every level achieved during the lifelong learning process,
- Make the infrastructure and equipment of vocational and technical education institutions compatible with rapidly changing and evolving technology through the use of public and private sector resources,
- Issue the national occupational map together with stakeholders,
- Increase the quantity and variety of production and services realized within the scope of revolving funds,
- Conduct studies to determine teacher qualifications related to vocational field knowledge during teacher placements according to central exam results,
- Develop effective and efficient mechanisms for vocational and technical education teachers to ensure their personal and professional development in cooperation with the sector,
- Regulate foreign language programs based on readiness of vocational and technical education students,
- Start the vocational education program at the 9th grade,
- Start skills training and internship at businesses earlier,
- Improve the opportunities for groups requiring specific policies (girls, women, people with disabilities, convicts or detainees, etc.) to access vocational and technical education,
- Establish a strong vocational and technical education system especially in OIZs.
- Provide access to vocational and technical education for the students who have been subjected to forced migration and are under temporary protection in our country.

7.4 Our Strategic Goals and Actions

Public awareness will be raised.

It is not possible to say that the social awareness of vocational and technical secondary education is adequate. Vocational and technical education is seen as a secondary education, and the social and economic value is attributed rather to the general secondary education and higher education. This perception prevents the successful students from choosing vocational education.

The visibility of activities that can provide a positive perception, such as sectoral cooperation protocols and project competitions at national or international level, in the form of good practice model will be enhanced by providing widespread and continuous use of media facilities intended for promotion and awareness to create a positive social perception towards vocational and technical education.

GOAL 1

The value attributed to vocational and technical education will be ensured to be enhanced

1 The visibility of good practice examples on media platforms will be increased in the context of education-employment-production along with the sector in vocational and technical education.

ACTION ***A web portal related to vocational and technical education will be created and integrated with e-Government.***

A vocational and technical training portal will be established where the job seekers and the employers meet in order to facilitate the access of individuals from a single point to subjects related vocational and technical education by bringing together the data of all stakeholders related to vocational and technical education, reduce the bureaucracy, ensure supply-demand matching, and support the individual in vocational guidance and career processes. The relevant units of the portal will be integrated into the e-Government system.

ACTION ***Social media will be used effectively to create awareness for vocational and technical education.***

In order to create awareness for vocational and technical education, spot films, visuals, animations, infographics, etc. will be prepared and published through social media.

2 A digital platform for orientation and guidance for the promotion of vocational and technical education curricula will be created.

ACTION ***A digital platform for orientation and guidance for vocational fields will be created.***

A digital platform will be established in which vocational and technical secondary education curricula will be promoted and guidance activities will be carried out, and this digital platform will be linked with the web portal.

GOAL 1

The value attributed to vocational and technical education will be ensured to be enhanced

3 Every year, a trade fair will be held in which the products produced in vocational and technical education institutions will be exhibited.

ACTION *Vocational and technical education exhibition/fair will be organized.*

A central exhibition will be organized to exhibit the products produced in the workshops of our schools and the selected and successful projects with the goal of awareness raising in the field of vocational and technical education in our country, promoting vocational and technical education, and strengthening vocational and technical education through exchange of experiences.

4 National and international competitions will be organized in order to increase interest in vocational and technical education, and micro-credits will be provided to successful students either while continuing their education or after graduation.

ACTION *An international MoNE robot contest will be organized.*

An international MoNE robot contest will be organized in Samsun in order to enhance the quality of vocational and technical education in our country, raise awareness in this field, educate high school and university students as entrepreneurs and competitive individuals who can transform their acquired knowledge into skills, develop products, and think scientifically, and promote and exhibit industrial and technological developments, and share experiences.

ACTION *The project "Vocational High School Students Meet Their Families" will be implemented.*

The project "Vocational High School Students Meet Their Families" will be implemented in order for students to improve their national, spiritual, moral, human and cultural values, strengthen their feelings of helping the needy, brotherhood, compassion, conscience, unity, and togetherness, acquire tolerance, respect, love, sensitivity to profession and trade as successful individuals, establish permanent heart bridges in the community, improve their soft skills and self-confidence, gain the consciousness of representing the school in the social and cultural area, ensure that they spend their extracurricular time efficiently, strengthen their sense of belonging to the school, and develop professional skills with real-life on-the-job training, and to promote Vocational and Technical Anatolian High Schools and ensure the integration of students and teachers into society.

GOAL 1

The value attributed to vocational and technical education will be ensured to be enhanced

ACTION ***A MoNE Wooden Toys Contest will be organized.***

A wooden toy competition will be organized in order to develop the talents of students, increase the diversity of natural and healthy wooden toys, bring talented students into the sector, and design new toys that will contribute to the national economy, complying with ergonomics, research and development focused, and suitable for patent application.

ACTION ***Micro credit support will be provided in cooperation with the relevant stakeholders.***

Micro loans will be provided in cooperation with the sector, the Ministry of Industry and Technology, TÜBİTAK, etc. to the projects regarded as worthy of support in national and international competitions.

5 Students who graduate from vocational education institutions will be provided with certificated training, nano-credit courses, courses accredited by the industry and academia together, and similar opportunities by using various resources, so that graduates will constantly update themselves with new knowledge and skills.

ACTION ***Course programs will be prepared to provide graduates with new knowledge, skills and competencies.***

It will be ensured that vocational education graduates will be provided with knowledge on changes to curricula based on school type, program, field, and branch, and with new skills and attainments in addition to former ones.

Workshops will be organized to prepare certificate programs with the sector, the Ministry of National Education and Universities.

Course programs of the published 2nd, 3rd and 4th level National Occupational Standards will be prepared.

ACTION ***Course programs of in-service trainings to be held by the sector for employees.***

Workshops will be held to convert the existing in-service trainings of the sector into MoNE-approved certificate programs allowing graduates to gain new knowledge, skills and competencies.

A Vocational Guidance System is under development to ensure that our children go towards education in line with their own skills, interests, and abilities.

A widespread professional skills assessment and guidance system that identifies vocational interests and abilities of students starting from basic education and guides students and their families accordingly will be established. In this context, a General Skill Test Battery will be developed and implemented for vocational orientation. In addition, elective courses on vocational orientation will be included in the curriculum.

GOAL 2

Guidance and access opportunities will be increased in Vocational and Technical Education.

1 A "General Skills Test Set" will be developed for the process of field and branch selection in career guidance.

ACTION | ***Norm and update work will be done for the General Skill Test Set.***

A workshop will be organized in Ankara with the participation of academics, İŞKUR officials, MoNE central organization personnel, sector representatives, school principals, teachers and students.

A pilot implementation center will be established in Ankara province before the implementation of the General Skills Test Set. For this purpose, computers, internet access, installation of batteries and training of teachers will be provided.

An implementation will be carried out in the pilot center.

2 Data relating to children for whom vocational guidance services are rendered will be recorded to the e-portfolio system.

ACTION | ***The results for the General Skills Test Set will be integrated into the e-portfolio system.***

It will be ensured that the Test results of the students to which the General Skills Test Set is applied will be recorded in the e-portfolio system.

ACTION | ***The field scale results within the National Vocational Information System will be integrated into the e-portfolio system.***

The interest-, ability-, and values-related scale results in the National Vocational Information System will be integrated into the e-portfolia system.

GOAL 2

Guidance and access opportunities will be increased in Vocational and Technical Education.

3 Flexible and permeable horizontal mobility opportunities will be developed on the basis of curriculum among school types, so that it will be ensured that children will use their attainments as an opportunity to acquire the skills of another profession.

ACTION

Minor will be allowed in vocational and technical education.

Workshops will be organized to prepare curricula allowing minor disciplines in addition to major fields/branches in Vocational and Technical Anatolian High Schools.

Curricula of branches with similarity of 50% or more will be revised to allow for minor disciplines.

The list of minor disciplines that pay be pursued with graduation fields/branches

will be created. The necessary work will be done to update the relevant legislation.

4 Special scholarship opportunities will be increased for children in vocational and technical secondary education institutions.

ACTION

Cooperation protocols will be concluded for the children in vocational and technical secondary schools to receive special scholarships.

Protocols will be concluded to increase the attractiveness of vocational and technical education and enable students to choose vocational high schools, so that the number of students who will benefit from scholarship opportunities will be increased.

ACTION

Support packages will be provided to Syrians Under Temporary Protection (SUTP) and our students as part of the Project for Social and Economic Cohesion through Vocational Education being executed in partnership with the German Development Bank.

About 10,000 Syrians Under Temporary Protection and our students ensured to attend Vocational and Technical Education institutions will be provided with support packages composed of transportation, lunch, stationery, practicing materials, and work wear.

GOAL 2

Guidance and access opportunities will be increased in Vocational and Technical Education.

5 Efforts will be made for the transition of our children in vocational and technical secondary education to higher education programs in their professional fields.

ACTION

Undergraduate programs which are the continuation of field/branch programs of vocational and technical secondary education will be determined.

A workshop will be held with relevant stakeholders to determine the undergraduate programs which are the continuation of field/branch programs of vocational and technical secondary education.

ACTION

YÖK will be cooperated with in order to increase the rate of transition to higher education programs in the fields of vocational and technical secondary education graduates.

Arrangements will be made to provide the graduates of vocational and technical secondary education with additional quota to undergraduate programs related to their graduation fields in order to increase their possibilities of placement.

6 It will be easier for the foremen and senior expert staff at various institutions to attend on-the-job training classes based on the criteria to set.

ACTION

Legislative arrangements will be made to enable the foremen and senior expert staff to attend on-the-job training classes.

Legislative arrangements will be made to attract foremen and senior expert staff to attend on-the-job training classes for allowing sector experience transferred to education settings.

Furthermore, cooperation protocols will be concluded with the sector to enable foremen and senior expert staff to attend on-the-job training classes.

7 Support for successful graduates who wish to move to higher education will be structured.

ACTION

Vocational and technical secondary education curricula will be updated to prepare successful students for higher education.

Vocational and technical secondary education curricula will be revised and university preparation packages will be prepared for 12th grade students.

Curricula are being updated in vocational education, Field Educations starts with the 9th Grade.

Field education in vocational education will be implemented starting from the first year in accordance with the competences in line with sector demands and the national occupational standards by means of arrangements on share of skill practices, teaching times and teaching materials. The curriculums will be organized in a structure that will provide the competencies that the sector will need in the future.

GOAL 3

New-generation curricula will be developed.

1 Curricula will be developed in accordance with the competencies demanded by the sector, and fields and branches suitable for digital transformation will be opened.

ACTION ***Fields and branches will be updated according to national and international references and the demands of the sector .***

Fields and branches with similar competences and attainments will be merged, the area and branches with contracted employment opportunities as well as the relevant school types (VTAHS, VEC, Course Program, etc.) will be identified.

Workshops will organized to update the fields and branches in line with demands of the sector and the national and international references.

ACTION ***Fields and branches suitable for digital transformation will be opened.***

Workshops will be organized in cooperation with universities, related sectors, NGOs and public institutions to reveal new-generation professions of the 21st century.

Workshops will be organized to open fields and branches suitable for digital transformation.

2 Field courses in vocational education will be started in 9th grade.

ACTION ***Curricula will be updated in order to start the field selection in the 9th grade in vocational education.***

Framework curricula to be prepared after determining the fields/branches to be updated in line with international references and sector demands will be implemented upon the approval of TTKB.

A workshop will be organized to start the field courses in vocational education in 9th grade.

The necessary work will be done to update the relevant legislation.

GOAL 3

New-generation curricula will be developed.

3 The contents, education periods and education materials of the fields, branches, and modules of vocational and technical secondary education will be reviewed and rearranged in line with the needs of children and demands of the work life.

ACTION

The contents and education periods of the fields, branches, and modules of vocational and technical secondary education will be reviewed and rearranged in line with the needs of children and demands of the work life.

The contents and education periods of the fields, branches, and modules of vocational and technical secondary education will be reviewed.

Workshops will be organized to review and rearrange the contents and education periods of the fields, branches, and modules of vocational and technical secondary education in line with the needs of children and demands of the work life.

ACTION

Educational materials will be reviewed, and rearranged according to the changes in the curriculum.

After rearranging the contents and education periods of the fields, branches, and modules of vocational and technical secondary education, educational materials will be updated.

Workshops will be organized every year to review educational materials, and rearrange them according to the changes in the curriculum.

4 Share of skill applications, teaching times and teaching materials of vocational fields and branches in vocational education will be arranged taking into account national occupational standards in accordance with the competencies required by the sector demands, and the implementation of the field education will begin starting from the first year.

ACTION

The duration of skill practices will be increased in the curricula and materials of the vocational and technical secondary education.

Number of practices in materials of the modules included in content of the field/branch curricula will be increased.

Workshops will be organized to increase the share of skill practices in vocational education. The teaching time of the modules applied in vocational education will be reviewed.

Curricula will be revised to make field courses start from the 9th Grade.

Workshops on organizing teaching materials depending on the teaching time in vocational education will be organized.

GOAL 3

New-generation curricula will be developed.

5 Vocational and technical curricula in the field of Traditional Turkish Arts will be created.

ACTION

Vocational and technical curriculum in the field of Traditional Turkish Arts will be created.

Qualification tables, process analysis forms, module information pages, course information forms and framework curriculum for the field of Traditional Turkish Arts will be prepared and implemented.

6 Quality assurance systems will be implemented in vocational and technical secondary education institutions

ACTION

Quality assurance systems will be implemented in vocational and technical secondary education institutions

In order to periodically monitor the quality processes of vocational secondary education, an institutional external evaluation system based on themes such as the institutions' educational setting and infrastructure, the success, attendance and discipline of the students at school, guidance work carried out by the school, projects of the school and school-sector collaborations, social activities carried out by the school, school healthcare activities, and school administration, and the affiliated sub-indicators will be built.

Educational settings are improving, production is increasing

The quantity and variety of production and services realized within the scope of revolving funds will be increased, so that production awareness within education will be supported. Furthermore, it will be ensured that the infrastructure and equipment of vocational and technical education institutions is made compatible with rapidly changing and evolving technology through the use of public and private sector resources, Production in vocational and technical secondary education institutions will be encouraged within the scope of revolving funds and this production will be increased by years.

GOAL 4

Educational settings and human resources will be improved.

1 Standard equipment lists and architectural layouts of workshops and laboratories will be renewed in line with the updated curricula and needs analysis.

ACTION | ***The standards for equipments in workshops and laboratories will be updated.***

Standard equipment lists will be revised in line with updates to the curriculums.

ACTION | ***Standard architectural layout plans and needs analysis of workshops and laboratories will be updated.***

Standard architectural layout plans and needs analyzes will be revised according to the updates made in the curriculum.

2 15% treasury deduction from the revolving fund revenues of vocational and technical secondary education institutions will be reduced to 1%.

ACTION | **Legislative arrangements will be made to reduce the 15% treasury deduction from the revolving fund revenues of vocational and technical secondary education institutions to 1%.**

In order for revolving fund enterprises of vocational and technical secondary education, enabling students to gain experience with on-the-job training, to work in full capacity and contribute more to production and training, 15% treasury deduction applied to these enterprises will be reduced for 1%.

3 Increasing the quantity and variety of production and services realized within the scope of the revolving fund will be encouraged. In this context, infrastructure, equipment and practice material needs of educational settings will be met.

ACTION | ***Revolving funds legislation will be amended.***

The revolving fund legislation will be rearranged and a certain percentage of schools' income from the revolving funds will be used to meet the educational settings' needs for infrastructure, educational environment, equipment, and supply materials.

ACTION | ***Equipment infrastructure of schools with revolving funds will be strengthened.***

Cooperation with the General Directorate of Support Services will be made to strengthen the infrastructure of the schools with revolving funds.

GOAL 4

Educational settings and human resources will be improved.

4 Professional development of our teachers in real production settings will be supported.

ACTION

Protocols and projects will be prepared in order to increase the professional development and qualifications of our teachers.

In the light of the developing technology and renewed information in the sector, it will be ensured that the occupational field teachers will increase their vocational competences with in-service and on-the-job trainings in real production settings.

More trainings in more fields will be organized in order to increase the knowledge and skills of the teachers of workshop and laboratory courses, update their knowledge and skills, and enable them to transfer these knowledge and skills to their students.

As part of the project to improve the quality of vocational education by increasing the capacity of the Ministry of National Education, which is being prepared within the scope of European Union funds, teachers will be provided with on-the-job training.

ACTION

International mobility projects will be prepared in order to provide professional development of teachers in real production settings in schools affiliated with the VTEGD.

The number of projects will be increased through awareness-raising activities for designing overseas mobility projects intended for vocational development of teachers in real production settings.

5 Overseas mobility projects will be prepared for the purpose of developing on-the-job training and foreign language skills of students.

ACTION

Support will be provided to the schools affiliated with VTEGD, so the schools will be supported for enabling them to prepare overseas mobility projects in order to develop on-the-job training and foreign language skills of students.

Project cycle management trainings will be given in order to support schools to enable them to prepare overseas mobility projects in order to develop on-the-job training and foreign language skills of students.

Professionals needed for businesspersons investing abroad are trained abroad

In order to meet the workforce demands of our international investors, the competitiveness in the international arena will be increased by providing vocational education for the human resources needed in the country where the investment is made. In this context, it is aimed to increase the number of institutions providing vocational education with the support of investors in the countries where the investment is made.

GOAL 5

Professionals needed for businesspersons investing abroad will be raised

1 Relevant sectors will be cooperated with to raise qualified workforce needed by international investors for specific fields.

ACTION ***Protocols will be concluded to increase cooperation for international investors.***

Companies with international investments will be matched with schools strong in their vocational fields. Necessary support will be given in order to raise qualified workforce in the educational institutions established by these firms in the country they invest.

2 Necessary support in the field of vocational and technical education will be provided in cooperation with TİKA in countries that are strategic for the Republic of Turkey.

ACTION ***Experience will be shared for vocational and technical education in strategic countries in cooperation with TİKA.***

Activities such as the following will be carried out: developing vocational and technical education systems of countries; knowledge/technology sharing; educator/expert support; opening of schools; establishment of workshops and laboratories in opened vocational education centers; preparation of training programs, materials and course notes; educator/staff training in the areas needed by the target countries.

Education-employment-production bond strengthens with the sector, and the number of good practice examples increases

It will be ensured that vocational and technical secondary education institutions that need to have intensive interaction with the private sector will be in intensive interaction with sector leaders in Turkey. In this context, vocational education-sector consultation meetings will be organized, good practice models will be planned, and the number of protocols with institutions and organizations will be increased.

Giving priority to graduates for employment and applying wage differentiation based on vocational education areas and levels will be encouraged. In order to meet needs of organized industrial zones across Turkey for professionals and to strengthen R&D activities, technical colleges will be disseminated in the regions where they are located.

GOAL 6

Education-Employment-Production Relationship in Vocational and Technical Education will be Strengthened

1 It will be ensured that vocational and technical secondary education institutions will be in intensive interaction with sector leaders in Turkey.

ACTION ***Education-Sector Consultation Meetings will be held.***

Education-Sector Consultation Meetings will be held in 81 provinces in order to transfer the improvements in vocational and technical education to the sector, exchange views, and improve education-sector cooperation in vocational and technical education.

ACTION ***School-sector matchings will be included within the scope of the protocols.***

It will be ensured that our schools follow the developments of the sector closely.

2 Giving priority to graduates for employment and applying wage differentiation based on vocational education areas and levels will be encouraged.

ACTION ***The employability of vocational and technical education graduates will be increased.***

Similar to the 36-month SGK employer contribution incentive granted to enterprises employing vocational high school graduates; if the graduates are employed in their own fields, it will be ensured that the worker share in the SGK contribution will not be deducted for 36 months as well.

It will be ensured that each vocational and technical secondary education student's periods of skill trainings and internships completed by actually working in real work settings within businesses are included in their retirement insurance.

Arrangements will be made for 3-year postponement of military service for any individual, who has to leave the job to do his military service after vocational secondary education, to prevent him from going through a hardship of finding a new job, and for the duration of military service if this individual remains employment continuously throughout this period.

GOAL 6

Education-Employment-Production Relationship in Vocational and Technical Education will be Strengthened

3 The number of vocational and technical schools will be increased in Organized Industrial Zones (OIZ) in cooperation with the Ministry of Industry and Technology.

ACTION

It will be ensured that vocational and technical education schools and fields are opened in organized industrial zones in line with the protocol with the Ministry of Industry and Technology.

The procedures for opening vocational and technical education schools and fields in organized industrial zones in line with the protocol to be concluded with the Ministry of Industry and Technology will be done.

4 Initiatives by public and non-governmental organizations to open vocational and technical education institutions and to provide financial contribution will be supported.

ACTION

A protocol will be prepared for the contribution of the sector to vocational and technical education by bearing the cost of technological renovation of Vocational and Technical Anatolian Schools and materials that students need in their practical courses.

The following will be provided by cooperation protocols for vocational and technical education: school construction, workshop and laboratory installation and equipment, provision of practice material for students, and financial contribution of public institutions and organizations.

The current legislation will be reviewed in order for public and non-governmental organizations to open vocational and technical education institutions and provide financial contribution.

The enterprises will be encouraged to open a special Vocational Training Centers in order to train their own workforce.

5 Informatics Vocational High School model will be structured in Technoparks.

ACTION ***A protocol will be prepared to open informatics vocational high schools in Technoparks.***

The procedures for opening schools for the informatics sector as part of special programs and project schools based on cooperation protocols to be concluded with Technoparks will be carried out.

6 It will be ensured that the students, teachers and administrators of schools generating inventions, patents or brands will receive a share from revenues arising from revolving funds.

ACTION ***Revolving funds legislation will be amended.***

Revolving funds legislation will be rearranged, and it will be ensured that the students, teachers and administrators of schools generating inventions, patents or brands will receive a share from revolving fund revenues.

Domestic and national defense industry is strengthening through vocational education

Cooperating with the leading institutions and organizations of the defense industry, ASELSAN in particular, in line with the needs of the industry, qualified workforce will be raised in secondary education institutions by means of vocational education for the first time.

GOAL 7

Qualified workforce needed by the domestic and national defense industry will be raised.

1 Support will be given to the training of the strategic workforce needed by the defense industry.

ACTION ***Cooperation protocols will be concluded with organizations operating in the defense industry to raise the strategic workforce needed by the sector.***

It will be ensured that the qualified workforce needed by the Defense Industry will be provided by our schools.

In line with the protocols with the defense industry, courses will be organized for the training of strategic workforce.

ACTION ***The curriculum of the field Defense Systems Technology will be prepared.***

Workshops will be organized in order to establish vocational and technical education curriculum for the field Defense Systems Technology.

2 All schools in this field will be opened in cooperation with defense industry organizations.

ACTION ***Schools will be opened in this field through cooperation protocols with defense industry organizations.***

The workshops and laboratories of the schools to be opened in the Defense Industry field will be installed and equipped in accordance with the technology of the sector by using the support from the Defense Industry sector.

ACTION ***Equipment standards of the profession for the defense industry will be determined, standard architectural layout plans and needs analyzes will be prepared.***

After designing the curriculum of the profession for the defense industry, the equipment standards of this field will be determined, standard architectural layout plans and needs analyzes will be prepared.

GOAL 7

Qualified workforce needed by the domestic and national defense industry will be raised.

3 Collaborations with various organizations on future professions will be developed for projects, training, and institution founding.

ACTION ***Cooperation will be held with all stakeholders of vocational and technical education to determine the professions of the future.***

A workshop will be organized with the participation of the stakeholders of vocational and technical education in order to determine the professions of the future, and a report will be prepared.

ACTION ***Cooperation protocols with various organizations will be made on future professions.***

Cooperation protocols will be concluded with various organizations on future professions and the relevant curricula will be developed, students and teachers will be qualified in new professional fields, and new professional staff needed in the sector will be raised.

ACTION ***Courses and seminars for Industry 4.0 and Digital Transformation will be organized.***

More trainings in more fields will be organized in order to increase the knowledge and skills of the administrators and teachers who work in close fields intended for adaptation to future professions, update their knowledge and skills, and enable them to transfer these knowledge and skills to their students.

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ANNEX 1 Revolving Fund Revenues from Hotel Management Operations by Provinces

Province	Hotel Management Operating Income	Province	Hotel Management Operating Income
ANTALYA	4,929,461	ESKİŞEHİR	689,829
BALIKESİR	4,536,848	GİRESUN	685,481
ADANA	4,098,002	ISPARTA	555,999
İSTANBUL	3,623,078	AFYONKARAHİSAR	545,635
AKSARAY	2,827,743	BOLU	530,668
YALOVA	2,568,171	AMASYA	528,374
MUĞLA	2,004,479	ERZURUM	517,197
İZMİR	1,998,789	ORDU	498,356
BURSA	1,789,967	KIRKLARELİ	465,599
ANKARA	1,551,866	ÇORUM	441,723
TEKİRDAĞ	1,457,212	KAHRAMANMARAŞ	433,753
BARTIN	1,294,629	GAZİANTEP	337,363
AYDIN	1,106,490	KARS	319,402
YOZGAT	1,038,208	HATAY	241,981
SİVAS	970,656	ŞANLIURFA	210,187
KONYA	922,592	MUŞ	144,814
ÇANAKKALE	852,312	DENİZLİ	138,152
MERSİN	785,418	SAMSUN	79,432
NEVŞEHİR	755,729	KARABÜK	70,727
KAYSERİ	730,115	KIRIKKALE	53,814
TRABZON	713,148	KÜTAHYA	40,514

ANNEX 2 Revolving Fund Revenues from Manufacturing, Maintenance and Repair of Desks, Tables, Lockers, and Various Furniture by Provinces

Province	Desks, Tables, Lockers Various Furniture Manufacturing Maintenance Repair Operating Income	Province	Desks, Tables, Lockers Various Furniture Manufacturing Maintenance Repair Operating Income
ANKARA	4,891,991	UŞAK	240,600
İSTANBUL	4,347,354	ISPARTA	228,940
ŞANLIURFA	3,359,753	TUNCELİ	222,249
İZMİR	3,243,328	VAN	206,663
BATMAN	3,215,293	SAKARYA	158,212
GAZİANTEP	2,358,411	ADANA	156,915
HATAY	2,159,963	KÜTAHYA	152,496
HAKKARİ	1,777,741	ÇANAKKALE	150,668
DİYARBAKIR	1,394,243	MERSİN	150,603
ANTALYA	1,358,230	BARTIN	149,295
ERZURUM	1,160,291	DENİZLİ	148,285
KAYSERİ	1,119,726	TOKAT	144,466
ELAZIĞ	1,100,738	ZONGULDAK	141,590
MUŞ	1,065,621	ORDU	130,027
SAMSUN	1,032,936	BİLECİK	117,856
BİTLİS	935,044	BALIKESİR	109,738
AĞRI	913,389	GİRESUN	94,978
KONYA	877,733	ERZİNCAN	90,284
KİLİS	812,446	ESKİŞEHİR	87,004
KAHRAMANMARAŞ	766,966	SİNOP	85,065
SİİRT	708,836	MANİSA	74,376
BİNGÖL	698,933	OSMANİYE	69,516
KOCAELİ	569,269	AFYONKARAHİSAR	62,407
AKSARAY	507,200	BAYBURT	57,202
DÜZCE	443,061	MUĞLA	46,958
ÇORUM	423,970	RİZE	32,609
KIRŞEHİR	418,186	BOLU	26,083
YOZGAT	412,775	AMASYA	24,112
KARAMAN	368,134	EDİRNE	17,332
KASTAMONU	356,633	AYDIN	16,025
BURDUR	317,011	TEKİRDAĞ	15,294
NEVŞEHİR	287,568	KIRKLARELİ	11,967
GÜMÜŞHANE	275,431	KARS	10,564
ADIYAMAN	266,421	BURSA	4,475
YALOVA	265,030	TRABZON	701
NİĞDE	260,989	MARDİN	31

147

ANNEX 3 Revolving Fund Revenues from Hotel Management Operations by Provinces

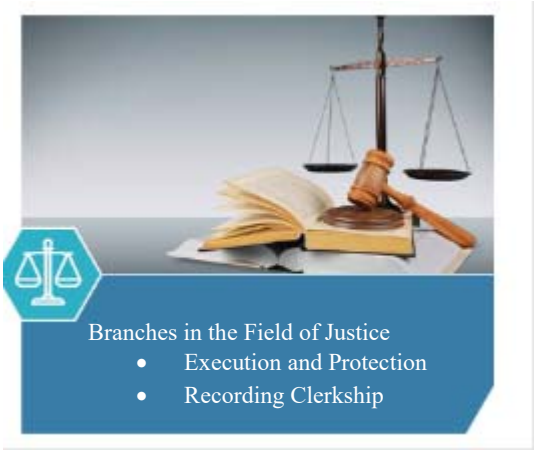
by Provinces

Province	Food and Beverage Sales Operating Income	Province	Food and Beverage Sales Operating Income
ANTALYA	5,950,615	ORDU	518,592
ZONGULDAK	4,673,519	AĞRI	471,245
ISPARTA	4,268,884	KASTAMONU	422,527
BOLU	3,595,176	İSTANBUL	324,707
YOZGAT	3,468,977	DENİZLİ	285,409
MUĞLA	2,941,753	KAYSERİ	168,911
KONYA	2,077,907	GİRESUN	138,402
AMASYA	1,979,788	AFYONKARAHİSAR	133,281
ANKARA	1,858,531	SAMSUN	103,952
BURSA	1,630,237	AKSARAY	82,782
ÇORUM	1,489,470	ERZİNCAN	80,413
AYDIN	1,455,867	ERZURUM	45,931
ÇANAKKALE	1,339,858	ADANA	41,759
TRABZON	1,233,196	DİYARBAKIR	40,329
MERSİN	1,209,095	RİZE	33,144
DÜZCE	1,087,415	HATAY	28,133
KIRŞEHİR	947,566	KIRIKKALE	25,188
KÜTAHYA	867,648	BALIKESİR	8,644
MANİSA	849,292	MUŞ	4,818
ESKİŞEHİR	809,801	KOCAELİ	4,059
İZMİR	603,022	ŞANLIURFA	3,260
BURDUR	566,842	KARS	140

ANNEX 4 Fields in Vocational and Technical Training

1. JUSTICE

Training is delivered as intended to the subject of correspondence in Ministry of Justice Headquarters and in all courts involved within the juridical and administrative judicial system and procedures for providing security in penal institutions and detention houses in the field of Justice.



Training delivered as of 2008 in the scope of the field is continued in branches of *Execution and Protection and Recording Clerkship*. While, graduates of Execution and Protection branch employed in Ministry of Justice (central and country) organization, Chief Public Prosecutor's Office, penal institutions (prisons, detention houses) they also have opportunity to get a job in private security companies and security related departments of public and private institutes. Those graduated from Recording Clerkship department; employed in courts of first instance (law, penal, administrative and tax), regional courts (court of justice and administrative), supreme courts, Ministry of Justice (central and country) organization, chief public prosecutor's offices, penal institution (prisons and detention houses) they also find job opportunities in supreme election committees and notary publics, law offices, banks and insurance companies and in legal affairs divisions of public and private institutions.

2. Family and Consumer Services

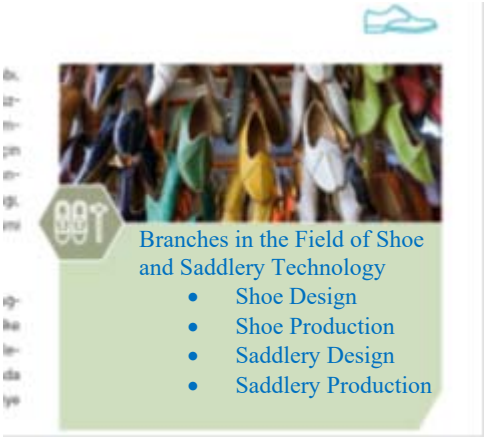
Training in the field of acquiring skills of planning family resources that the home and agency services staff should have, acquiring housing, arranging the arrangements, doing housework, reviewing the changing society and family structure, preparing various dishes and pastries, serving food is presented in the field of family and consumer services.

Training delivered as of 2008 in the field of family and consumer services are classified in the branches of *Environmental Services, House and Institution Services, Social Support Services and Consumer Services*. Graduates of Family and Consumer Services field can be employed in institutions and organizations working to improve the social lives of individuals facing problems in social life, in local administrations, various public institutions aiming to create a healthy and productive environment in the local administrations promoting quality of life of social supporters and families and works for the protection and awareness of the consumer.

3. Shoe and Saddlery Technology

Shoe and Saddlery Technology, is the area where the required qualification is acquired for the production of office materials such as boots for students, slippers, etc. and also bags in various types, valets, belt, hunting and sports materials, office materials such as folders, pen racks, notepads and diary. In the scope of the field students since 2006 can be trained by choosing one of the areas of *Shoe Design, Shoe Production, Saddlery Designing*.

Many people in Turkey provided employment opportunities in this field.Industry with its current capacity is in a level to fully meet country requirements and exporting. Those wishing to be employed in Shoe and Saddlery Technology field can work in shoe and saddlery production enterprises in private sector.



4. Information Technologies

Students given training in the Information Technologies field since 2006 besides the joint training intended for computer system's software and hardware installation in the branches of *Network Management, Computer Technical Service, Database Programming and Web Programming*.

As technology advances rapidly, the need for IT and the competent human resources in this field has begun to increase.It has wider job opportunities in network operators computer sales and technical support companies, banks, insurance companies, commercial organizations, internet service providers, internet publishing companies, radio companies, research companies, stock exchanges, transportation, logistics companies and public institutions in the service industry.They can co-operate with Web programming and database programmers, public institutions, banks and private sector business, e-commerce.They can also work in Computer technical service,

homemade computers and sales companies, companies dealing with computers.

In parallel to rapid developments in the field of medicine developing biomedical device technologies brought Biomedical Device Technologies field to a significant place in globe. With the advances in the field of medicine, the use and necessity of the devices in the diagnosis and treatment has increased and as a natural consequence this has increased the demands for the widespread use of the devices worldwide. Capacities in *Physiological Signal Monitoring Diagnostic and Recording Devices, Medical Imaging Systems, Medical Laboratory and Non-Patient Application Devices and Life Support and Therapy Devices* branches acquired since 2006 to present day in this field.

Branches in the Field of Biomedical Device Technologies

- Physiologic Signal Monitoring Diagnostic and Recording Devices
- Medical Monitoring Systems
- Medical Laboratory and Our of Patient Application Devices
- Life Support and Treatment Devices

Increasing device use and request for expansion created a vital business field (service support) after production and sales for the devices. Technical service staff employed in this business field with their training and certified tasks and by delivering quality service support to enterprises work for human health and life quality. Profession members acquiring relevant qualification by completing their training have the opportunity to make a career in enterprises dealing with Biomedical device technologies.

6. Office Management

Since 2005, students delivered training in the field of office management intended to acquire information and skills such as day-to-day business, litigation services, office management, communication, information and payments, office machines, presentation, meeting and travel services Training branches in the scope of the field are *Legal Secretariat, Trade Secretariat and Executive Secretary*.

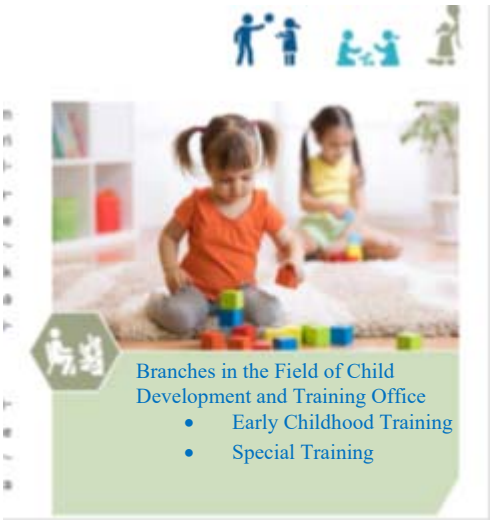
Development of computer and information technologies in our age brings office automation. Office automation is defined as works in office services performed with electronic machines and computers and supervising their results in computer environment. Office automation tools are devices such as computers, telephone, fax, telex, such as typewriters, communication tools such as photocopy. Graduates of the field can be employed in relevant divisions of private sector and public institutes, hospitals, municipalities, associations, chambers and bar associations. In addition, it is also possible

to employ office management graduates in the secretarial positions being the basic necessities of law, medicine, engineering and architecture offices.

7. Child Development and Training

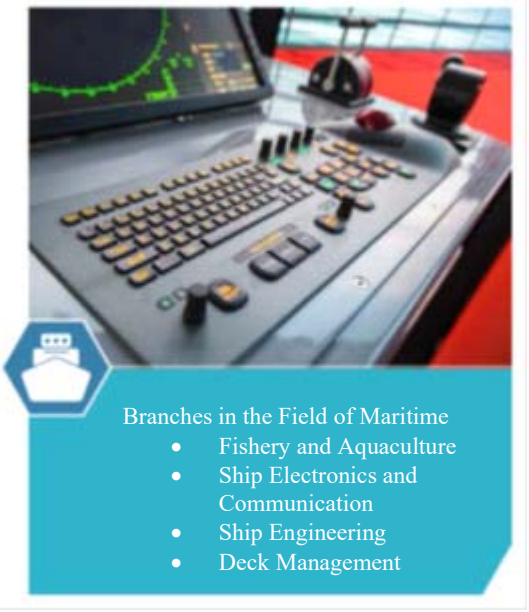
Child development and training is the field where students delivered pre-school education program preparation, self-care skills, types of inadequacy and inclusion, use in game development areas and activities, preparation of toys, preparing costumes and face painting, effective communication with the child, self-care in special education, preparation of special education program, knowledge and skills about inadequacy and education. Education in this area since 2006 is classified in *Early Childhood Training* and *Special Training* branches.

Graduates of child development and training can be employed in pre-school training institutes, Turkish Social Service and Children Protection Institution,child care facilities, children's organizations, childcare services at home.



8. Maritime

Maritime is the vocational and technical training field where student trained since 2006 to acquire qualification in branches of *Fishery and Aquaculture, Ship Electronics and Communication, Marine Engineering Operation and Deck Management*.



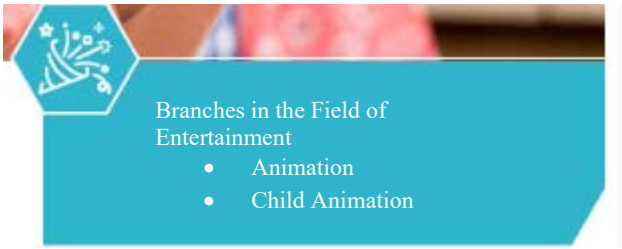
Maritime is one of the most demanding but popular occupations. Rapidly growing maritime transportation bring along more vessels and seaman requirement. Technologic development and increase in the needs create the need for seafarers to have high level knowledge and skills in electronics and mechanics as well as in their sailing and navigation capabilities. Students grown in this field can be classified as seaman and aquaculture. Seaman are the captain, officers, mariners and auxiliary service staff. Aquaculture can be expressed as people engaged in hunting, producing, cultivating, processing and placing on the market of marine and freshwater creatures.

Professionals acquiring required basic qualification in maritime by completing training process and anticipated open see apprenticeships are attending to qualification exams in line with the provisions of "Training and Exam Directive" and "Seaman Regulation" and

those passing the exam can begin with their careers in maritime industry by having their titles. Those trained in Deck Management branch save that they pass qualification exam can be employed in ships as officer in charge and may develop their experience and skills and be unlimited masters. Those trained in Marine Engineering save that they pass qualification exam can be employed in vessels as first engineer or as technical staff maintenance and repair facilities with the title of first engineer. First engineers can also be employed as chief engineer in line with their seniority and qualifications. Those trained in Ship Electronics and Communication branch save that they pass qualification exam can be employed in vessels as ship electronics and communication engineer or electronics engineer and also in ground stations and shore service and maintenance stations.Those trained in Fishery and Aquaculture, save that they pass qualification exam can be employed in fishing vessels as fishing vessel captain or in enterprises cultivating freshwater and sea creatures, public institutes and organizations, in public institutes and organizations performing fish breeding.

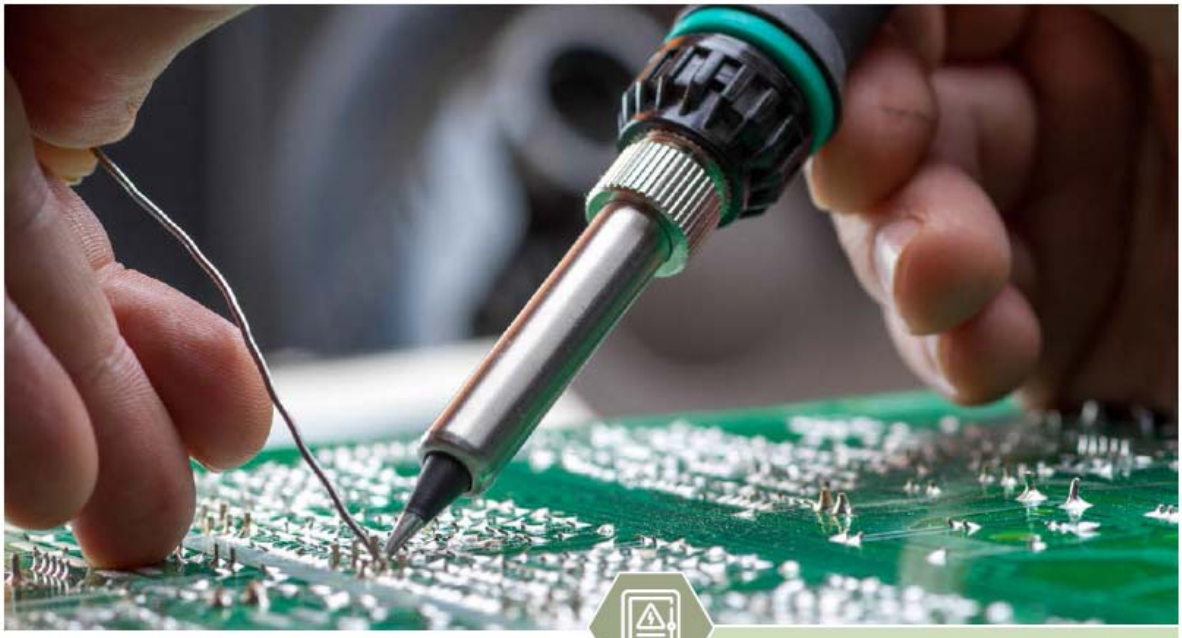
9. Entertainment

Students acquired qualification in the field of entertainment since 2006 for stage, sports and play activities, general culture, aesthetics and planning, children's organizations, children's activities and event planning. Students in this field trained in the field of *Animation and Child Animation*.



Entertainment services have an important place in the tourism sector.When services such as Fireworks organizations, music and art events, decor workshops, costume workshops, sound-lighting equipment, animation organization companies, human resources companies, travel agencies, special organizations such as festivals and similar organizations, food and beverage industry, sports equipment, animation materials, show organizations, theme parks and theme events are considered it can be seen that the graduates of entrainment field have many opportunities in terms of employment.

10. Electric- Electronics Technology



Students given training in the field of Electric-Electronics Technology since 2005 for repair, maintenance and repair of electrical and electromagnetic devices and qualifications acquired installing, maintenance and repairs of environmental systems. Students are trained in 10 distinct areas as *Coil Winding, Office Machines Technical Service, Electrical Installations and Panel Installer, Electrical Home Appliance Technical Service, Elevator Systems, Industrial Maintenance, Image and Sound Systems, Security Systems, Communication Systems and High Voltage Systems* in this field.

Electrical-Electronics Technology field is now transformed into a basic and productive industry developing all other fields.

The field has reached the power to develop its own design and technologies. While electric- electronic field affect many sectors besides its primary contribution to economy with its own production, export and employment also has secondary contributions with its affect to other industries.

Branches in the Field of Electric-Electronic Field

- Coil Winding
- Office Machines Technical Service
- Electrical Installations and Panel Installer
- Electrical Home Appliances Technical Service
- Elevator Systems
- Industrial Maintenance and Repair
- Image and Sound Systems
- Security Systems
- Communication Systems
- High Voltage Systems

Technologic changes and quality increases in this field means to be positive contributions to increase quality in many fields used industry products as input. Graduates of Electrical-Electronics Technology can work in public or private sector enterprises.

11. Handicraft Technology

Students acquired qualifications such as painting threads of carpets intended to be painted, pattern drawing, preparing traditional and local products, using the hand and machine embroidery in accordance with its technique, using the design program and processing according to industrial machine techniques, preparing textile and dowry products since 2006 in the field of Handicrafts.

Branches in the Field of Handicraft Technology

- Decorative Handicraft
- Decorative Home Textile
- Hand Weaving
- Hand and Machine Embroidery
- Carpet Designing
- Industrial Embroidery

Handicrafts, elements best reflecting the cultural values of a nation, have played an active role in conveying the art understanding and lifestyles of societies for centuries. In the meanwhile, development level in the fields of education, science, techniques and other fields and development level in handicrafts should be in harmony. Students in the field are delivered training in the fields of *Decorative Handicraft, Decorative Home Textile, Hand Weaving, Hand and Machine Embroidery, Carpet Design and Industry Embroidery*.

Although in the development of the industry, the handicraft is perceived to be at the edge of extinction its race with technology still ongoing in this field. Hand weavers have the opportunity to be employed in textile factories, carpet producing factories and weaving workshops; carpet designing weaving factories and workshops; and in workshops making individual studies or manufacturing on decorative handicraft.

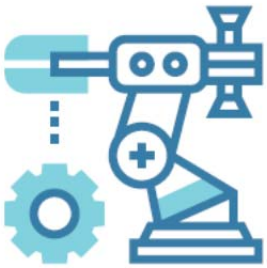
Hand or machine embroiderers can be employed in workshops with working environments prepared suitable with hand or machine embroidery. Industry embroiderer can be employed in enterprises relevant to his/her field. He/she has the opportunity to work in large and small workshops and factories.The decorative home textile production staff has the opportunity to work in large and small scaled workshops and factories.

12. Industrial Automation Technologies

Branches in the Field of Industrial Automation

- **Industrial Control**
- **Mechatronics**

It is the field where training delivered since 2006 intended for acquiring qualifications for Maintenance, repair, programming and basic manufacturing of automatic production machines, hardware and software operations for the measurement, monitoring and inspection of production using network structures of automation systems. Training in the scope of this area is delivered in *Industrial Control* and *Mechatronics* branches.



Industrial automation is widely used in every branch of robot technology. In nowadays it became a necessity even obligation of technology. Since it involves the subjects such as product design, system dynamics and intelligent control, monitoring of production processes, modeling and control, force electronics, microsystem design and applications, industrial control design, sensors and robot systems, image processing, inter-system communication networks, artificial intelligence and virtual reality, graduates of this field are employed in defense industry, automotive and textile industries.

13. Journalism

Branches in the Field of Journalism
- Page Editing
- Reporting Mechatronics

Training delivered to students in the field of Journalism since 2006 to acquire qualification of following agenda in the media sector, to collect and write information and documents related to news events, to make news for the age by researching, collecting, writing and editing the news to be delivered to the broad masses. Training delivered in for *Page Editors and Reporting* in line with the interests and skills of the students in this field.

Newspapers, magazines, news agencies, televisions and radios, advertising agencies carry on activities in this field. Printed media reporters; are employed in printed media institutions, news agencies and news portals. Since the pursue news they work in everywhere (press meetings, news releases, opening ceremonies, meetings, cultural events, etc.) out of their companies.

Photojournalists are employed in printed media institutions, news agencies and internet news portals. They often take photos in all environments where there is news. TV reporters are employed in visual and audio press institutions. Since they pursue news, they work in everywhere (press meetings, news releases, opening ceremonies, meetings, cultural events, etc.) where news exists out of their companies. Page editor work in printed media institutions, advertising agencies, publishing houses, printing houses, printed publishing divisions of various agencies and institutions.

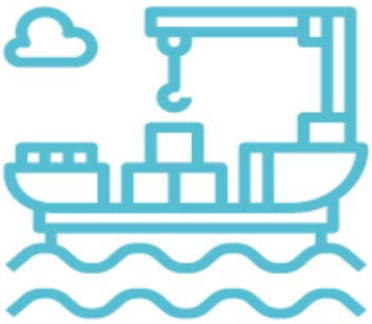
14. Ship Building

Branches in the Field of Ship Building

- Ship Outfitting
- Ship Building
- Yach Building

It is aimed to acquire the students with qualifications of ship building, yacht building, ship outfitting since 2011 in the field of Ship Building. Training is delivered for *Ship Outfitting, Ship Building and Yacht Building* branches in this area.

Political, technological developments and intense competition in the world at the end of 20thcentury pushed world marine trade to structural changes. Vessel's structure, type and sizes also developed their speeds and capacity in connection with the technologic developments.In addition to maritime transportation more economic for 6,5 folds when compared to highway transportation; and 3.5 folds economic when compared to railways;



bulk loads being transported in one time and in a safe manner makes ship building industry more advantageous.

In recent years maritime activities rapidly grown in Turkey. For that reason, possibility to find jobs is rather high in shipyards producing yachts of which their numbers increasing every year and for yacht design, outfitting, production and planning. Those graduated from Ship Building field may be granted workplace establishing certificate from their schools. Ship builders work in outdoor shipyards open for public and private sector and in design offices. Yacht builder work at shipyards building wooden and composite yachts, in design offices, shipyards owned by state or private sector and in production, design, installation, maintenance and repair areas. Ship outfitter works in shipyards owned by state and private sector, ship outfitting and design offices.

15. Food Technology

Branches in the Field of Food Technology

- Food Processing
- Food Quality Control

Students acquired with information and skills in the field of food technology for Basic physical-chemical processes required for food analysis, sensory, physical, chemical and microbiological quality control analyzes in raw materials and processed foods, production process controls, food packaging, labels and controls, dairy products, fresh fruit vegetables and products, meat and meat products, cereals and cereals, vegetable oil, alcoholic and non-alcoholic beverages, tea, processing of special foods.

Branches students given training since 2006 in the scope of field are *Food Processing and Food Quality Control*. Graduates of the field can be employed in food production of different scale (milk, meat, fruits, vegetables, cereals, vegetable oil, etc.) in all public institutions and private firms in production processes and quality control laboratories as Food Technician.

16. Graphics and Photographs

It is the field where student acquired with qualification for preparing designs manually or with computer within the artistic dimensions for the purpose of transmitting messages to a specific target audience with visual aids, taking photos of the product or subject, to make photos ready for printing and also qualifications of classic or automatic develops and printing systems in various characteristics. The training given in this field has been classified in *Photography and Graphic* branches since 2006.

Visual and audio techniques and rapid and technologic developments in media production industry directly influences Graphics and Photograph field.Graphic and photographic art being one of the tools providing written and visual communication amongst people,in this sense has a vital place in cultural, artistic, promotion and advertisement areas. Graphic and photo products in visual media and social life will continue to be popular and effective in the present and future.

Graduates acquiring required qualifications in business life by completing their training may build their careers in enterprises dealing with graphic and photograph.

17. Beauty and Hair Care Services

Students acquired skills on hair, skin, body care requirements, application methods of care and make-up methods since 2006 to present day in the field of beauty and hair care. Students trained in this field are delivered training on Skin Care and *Make-up, Men Hair Dressing and Women Hair Dressing* according to their interests and skills.

A person graduated from hair dressing department may be assigned as contracted master trainer under instructors' supervision in Public Education Centers affiliated to Ministry of National Education, in vocational training centers, vocational high schools with the condition of having received their mastership and qualified instructor certificates. Graduates can be employed in hair dressers of private institutes and organization, in theatre and TV studios and may establish their own work.

18. Public Relations and Organization Services

Branches in the Field of Public Relations and Organization Services

- Fair Organization Authority
- Public Relations
- Public Opinion Poll
- Customer Representation
- Operation Authority

Skills for acquiring students with introducing the institution to the students, establishing the relationships that may create positive impressions about the institution and the institution, planning the necessary activities for this purpose, introducing the companies to the customers-customers to the companies, carrying out the necessary works to develop the positive relations with the customers, ensuring that the social and economic issues are reached in line with the demands coming from the customers, to follow the process of organizing the organization, at the basic level of project development, arrangement and decoration of space, providing auxiliary services to gain competencies in the field of public relations and organization services.Branches where students delivered training since 2006 in line with their interests and skills are *Fair Organization Authority, Public Relations, Public Opinion Poll, Customer Representation and Organization Authority*.

This field has been created as a result of a need for institutes and organization in the globalizing world. The industry has relation with industries such as tourism, service, advertisement, marketing, etc. And this makes manpower in the industry to be versatile and at highest level.

Since public relations and organization services relates directly or indirectly with many industries job opportunities in this industry is rather wide. Graduates are employed in public relations agencies, public and private institutions and organizations, public relations, corporate communication and publicity departments, visual and audio media organizations, media monitoring agencies, public and market research companies, advertising agencies, news agencies, call centers, companies customer relations units, organization and fair companies, tourism companies, chambers of commerce etc. institutes.

19. Map- Land Registry Cadastre

Students delivered training intended for acquiring qualifications for land surveying, map drawing and calculations, making all kinds of procedures subject to land registry, land the boundaries of immovable property and identify on the map, identify the legal status and renew the cadaster in the field of Map-Registry-Cadastre. Students delivered training since 2008 in the branches of *Surveying, Cadastral Surveys and Title Deed Procedures*.

Demand in Turkey for surveying, determining property rights and relevant expertise on these immovable assets is growing. Privatization of the cadastral operations and the rapidly developing construction industry also increased the need for map and cadastral intermediation. Graduates serving as cadastral mapping technician in map and construction industry may also promote to site chief position. Works in map surveying and cadastral operation are executed partially in office and partially on site. These profession members may communicate with supervising engineers and each other in public institutes.

For title deed procedures working environment is the land registry office. Those employed in land registry offices may be in contact with branch managers and legal experts.

20. Patient and Elderly Services

Students delivered training intended to acquire information and skills for anatomy of human body, communication in health services, working in accordance with ethical principles and responsibilities, making personal care of patients and elderly, supporting medical care, providing nutrition for patients and elderly, taking precautions against infectious diseases, applying first aid to patient / injured, medical terminology, rehabilitation, healthy and active aging in the field of patients and elderly. Students since 2006 can be delivered training in line with their interests and skills in branches of *Patient Care and Elderly Care*.

Graduates can be employed in different institutes with their knowledge and skill in branches they have given training. Patient and Elderly Maintenance Technicians may seek jobs in hospitals and enterprises delivering health services.

Furthermore, they can work in social services, nursing homes, physical therapy and rehabilitation centers, public-private institutions and institutions providing home care services.

21. Animal Breeding and Health

Branches in Animal Breeding and Health

- Animal Breeding
- Veterinary Health

Students acquired information and skills for sustaining and breeding health of different kinds of animal species in the field of animal breeding and health. Covering many processes in animal breeding field students delivered training for *Animal Breeding and Veterinary Health* branches and it is aimed to acquire students with the following skills in the framework of the training since 2008.

Planning livestock-related business activities, building animal shelters, animal selection, structure and functions of animals' organs and systems, feeding animals, assisting in basic medical applications in animals,

Nutrition of cattle and small cattle, carrying out reproductive activities, protection from diseases, obtaining and evaluating animal products,

To assist the veterinarian in the diagnosis and treatment of animal diseases, to diagnose and follow up the pregnancy in domestic animals, to help with birth, to fight against diseases, to take quarantine and health measures in places where disease is started.

Field graduates can be employed in Ministry of Food, Agriculture and Livestock, TIGEMs (Directorate General of Agricultural Enterprises), Veterinary Control Research Laboratories, stud farms, animal shelters, private veterinary clinics, polyclinic and animal hospitals, experimental animals production, maintenance and feeding units, slaughterhouses, dog training centers, large and small cattle farms, poultry farms, breeding cattle breeders' association, sheep-goat breeders' associations, beekeeping associations, dairy producers' associations, public institutions and organizations and private enterprises.

22. Construction Technology

Students acquired information and skills for the design and use of contemporary building techniques used in structures serving different purposes including houses in Construction Technology field. Students given training in *Timber Construction Systems, Reinforced Concrete Construction Systems, Concrete-Cement and Ground Technology, Facade Systems and PVC Joinery, Roof Systems, Steel Structure Technical Drafting, Interior, Technical Drafting, Architectural Drafting, Restoration, Static Construction, Drafting Space Decoration, Building Insulation and Building Surface Coating* since 2005.

Structures serving various purposes from single storey buildings to skyscrapers and dams, highways, factories, bridges, viaducts, tunnels are built by using construction technologies. In Turkey with higher earthquake risk building quality structures bears importance.Engineering capacity of the firms and their qualified work force are the most important determinants of the quality of the work done.Graduates can easily seek jobs in great scaled and qualified firms. In addition they can be employed in public institutions such as State Water Works, Highways, Rural Services, Land Registry, Cadastre, Public Works, District and Branch Directorates and Municipalities and in ready mixed concrete plants, engineering and architecture offices, enterprises rendering services in the field of contracting and consultancy.

Branches in the Field of Construction Technology

- Timber Construction Systems
- *Reinforced Concrete Construction Systems*
- *Concrete-Cement and Ground Technology*
- *Facade Systems and PVC Joinery,*
- *Roof Systems,*
- *Steel Structure Technical Drafting,*
- *Interior, Technical Drafting,*
- *Architectural Drafting,*
- *Restoration,*
- *Static Construction Drafting,*
- *SpaceDecoration,*
- *Building Insulation*
- *Building Surface Coating*

23. Firefighting and Fire Safety

Branches in the Field of Firefighting and Fire Safety

- Fire fighting and Fire Safety

Firefighting and Fire Safety area carrying on its activities since 2011 is the field where training and education delivered enabling putting the fire off broken out in any way during the design, construction, operation, maintenance and use at public institutions and organizations, private institutes and organization by minimizing the loss of life and property, making search and rescue during natural disasters and undertaking organization, training and supervision with the measures to be taken before and after fire and natural disasters.

In nowadays where technological developments have gained rapid momentum and new products and different machines and vehicles have entered our daily lives, fire risks continuously increase each passing day. Students graduated from Firefighting and Fire Safety field are employed in fire-fighting units of local authorities, civil defense units, airports fire brigade units, forestry fire brigade units, refinery and chemical facilities fire brigade units, organized industrial zones fire brigade units, fire safety equipment private companies selling fire safety equipment, fire safety and fire brigade units in line with their acquired qualifications.

24. Chemistry Technology

Branches in the Field of Chemical Technology

- Paint Production and Control
- Leather Processing
- Chemistry Laboratory
- Tire Production
- Petro-chemistry
- Oil-Refinery
- Process

In the field of chemical technology, students develop expertise in how chemistry is used in various fields of application and develops application skills in their branch chosen.Since 2006 students are free for making selections amongst D*ye Production and Control, Leather Processing, Chemistry Laboratory, Tire Production, Oil-Petrochemical, Oil-Refining and Process* branches in line with their skills and interests.

Chemistry laboratory and process technicians can be employed in food, sugar, textile, refinery, tire industry, petrochemical, cement, automotive, ceramic, glass, metal, fertilizer, plastic, energy, mining, detergent and cosmetics industry.Petrochemistry and refinery technicians may be employed in production processes of refinery and petrochemistry enterprises. Paint production and practices technician may be employed in every kind of enterprise producing and applying paint.

Tire production technicians; may be employed in R & D laboratories with factories or workshops producing plastic products such as automotive industry, vehicle and aircraft tires, fender tires, vehicle interior floor tires, rubber and rubber shoes, belts, hoses and all kinds of tires.Leather production technician can be employed in raw leather stores, chemical material shops and in R&D laboratories

25. Accommodation and Travel Services

Since 2005, student delivered training intended to acquire qualifications for accommodation facilities, meeting the guests, guest needs and records, accommodation facilities, housekeeping, guest services, cleaning and layout of the department, tour programs, transfer transactions and meeting guests, guest needs and records, accommodation facilities, housekeeping, guest services, cleaning and layout of the department, tour programs, transfers and meeting guests, bookings, accommodation and booking in the field of accommodation and travel services.Students trained in this field are trained in *Housekeeping, Operation, Front Desk and Reservation* branches in line with their qualifications.

Tourism industry,together with the services rendered by travel agencies and other tourism companies provides major contribution to country economy in terms of income and employment. Qualified profession members acquired professional qualifications in line with scientific and technological developments involved in the service sector. This area meets the needs of the sector for trained labor.Profession members acquiring required qualification in business life by completing their training may build careers in the enterprises dealing with accommodation and travel services. Human factor is always at the forefront in accommodation and travel management forming the basis of tourism management.Also when advertisement and insurance services, car rental companies, car park services, accommodation support services and services in parallel to sales and post-sales services it is a reality that the business branch creates an indirect employment in a wider spectrum.

Employment areas are wide due to the development of tourism in accommodation and travel services,Qualified personnel are needed especially in resorts.Front office and floor staff work in hotels, motels, holiday villages, social facilities such as accommodation and leisure facilities and guest houses.There is no problem of finding job especially in summer months however job opportunities in this profession changes as regional and seasonal. Graduates of operation and reservation employed in agencies or local agencies affiliated to Association of Turkish Travel Agencies (TÜRSAB). They can also be employed in Ministry of Tourism and its affiliates and private tourism companies and in travel agencies.

26. Jewelry Technology

Students delivered training since 2005 to acquire qualifications of designing the jewelry to be produced, to transfer on paper by determining its sizes and producing in the field of Jewelry Technology.

Jewelry branch has taken its place by industrialization in the industry and provided significant amount of foreign currency entry for Turkish economy by putting quality jewelry and ornament amongst preferred product in world markets. Turkey ranking in second order in the world jewelry industry, with the rapid development in this area is poised to become the world leader. Jewelry manufacturers are generally employed in workshops and jewelry benches. Graduated students can find jobs in small or large-scale enterprises or in the jewelry sector in the jewelry sector in accordance with their qualifications.

Branches in the Field of Jewelry Technology

- Jewelry Manufacturing

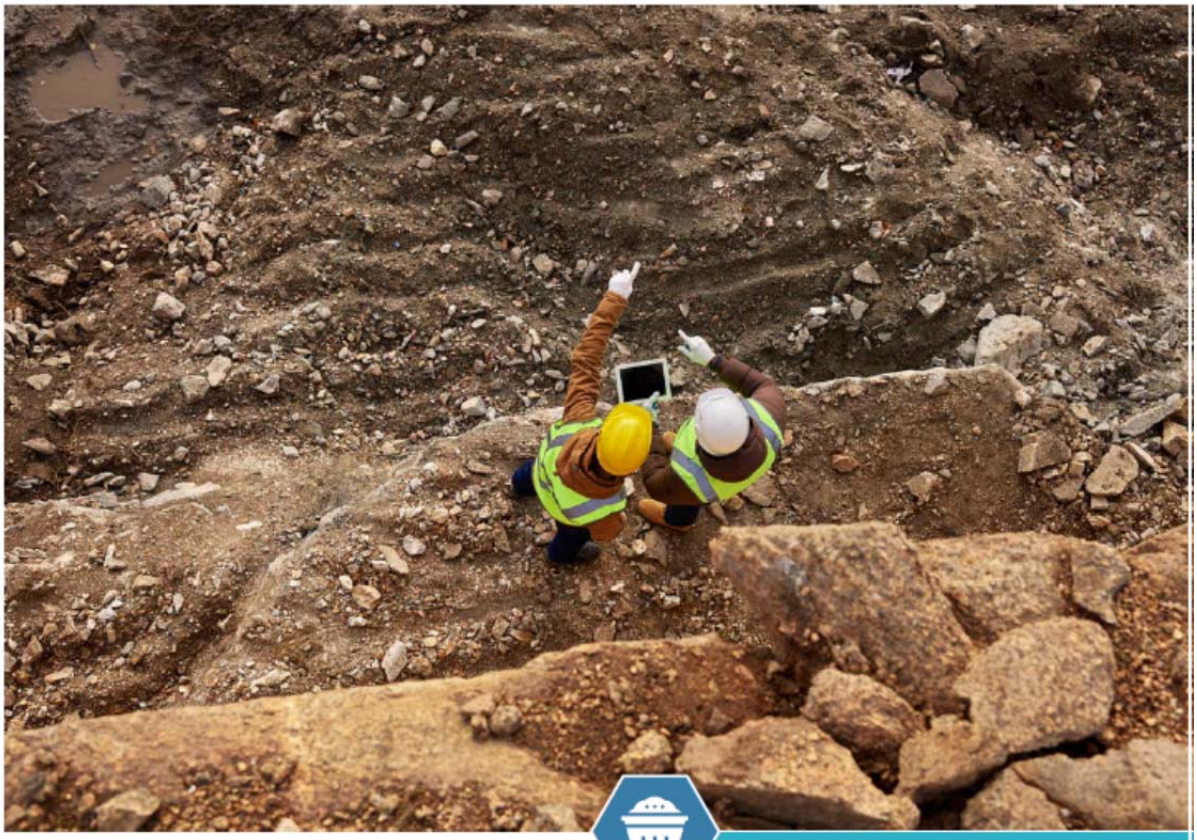
27. Laboratory Services

Training intended on acquiring information and skills on making analyses of soil, water, fertilizer, feed, herbal and animal originated food by utilizing valid methods and techniques in food, agriculture and animal health laboratories delivered in the field of Laboratory Services since 2008.
Graduates of laboratory service field can be employed in public and private companies, food, soil, water, leaf, fertilizer analysis laboratories, laboratories for the diagnosis of animal diseases, animal diseases research laboratories.

Branches in the Field of Laboratory Services

- Food, Agriculture and

28. Mining Technology



"Mining" industry occupying an irreplaceable place for human and social life became one of the factors playing most efficient role for developed countries to reach technology and wealth level throughout the history. Mining, together with agriculture, is one of the two main production areas that provide the raw material needs of societies.

For that reason it is aimed to grow qualified labor force having technical qualification, knowledge and professional certificate in the regions where mining activities intensely performed. Training is delivered in the field of mining in line with the interest and skills of the students in the field of mining technology.

Mining technology field graduates are employed as technicians in mining enterprises operated by public institutes and private sector.

Branches in the Field of Mining Technology

- Mining

29. Machine Technology

Students acquired qualifications of making machine manufacturing processes in classical and computer controlled production looms, molding techniques, sheet metal molds, making volume molds and business molds, drawing two and three dimensional machines and mechanisms, making basic maintenance and repair of machines, manufacturing of marble cutting and processing looms and modeling and prototyping for industrial production in the field of Machine Technology. Training delivered since 2005 for *Computer Aided Industrial Modeling, Computer Aided Machine Drafting, Computerized Machinery Manufacturing, Milling, Industrial Molding, Machine Maintenance, Marble Processing and Medical Device Manufacturing* branches in the scope of machine technology.

Branches in the Machine Technology

- Computer Aided Industrial Modeling
- Computer Aided Machine Drafting
- Computerized Machinery Manufacturing,
- Computerized Machine Manufacturing
- Milling
- Industrial Forms
- Machine Maintenance and Repair
- Marble Processing
- Medical Device Production

Employment opportunities in the field are rather diversified. Need for qualified staff both in world and home is quite high. Graduates having completed their training and acquiring required qualifications can be employed in factories, in their own workshops and in public institutes and organizations being enterprises dealing with machine technology. They can design two and three dimensional machine equipments in computer environment in design offices. They can manufacture designed machinery or industrial plant equipment in the manufacturing workshops on CNC machines.

Persons trained in Machine Technology can be employed in public or private enterprises (automotive, vessel, aircraft, industrial facilities). They may find jobs in CNC mechanical manufacturing workshops, mold making and prototyping factories, offices where production or complete drawings designed and plotted, mechanical maintenance workshops, marble and model manufacturing enterprises.

30. Printing Technology

Students delivered training since 2006 intended to acquire qualifications for pre-printing the originals for scanning, assembly, film or mold output from the computer, making films or molds ready for printing, printing presses needed for printing machine, printing settings, printing, controlling the printing process, periodic maintenance of the machine to gain qualifications in the field of printing technology. Branches training delivered in the field of printing technology are *Pre Printing, Post Printing, Flexo Printing, Offset Printing, Serigraphy and Pad Printing, Gravure Printing*.

Branches in the Printing Technology

- Pre-Printing
- Post-Printing
- Flexo Printing
- Offset Printing
- Serigraphy and Pad Printing
- Gravure Printing

Books, magazines, newspapers, brochures, posters, packaging are product produced in the printing field. Rapid development in the field of computer and information technologies has also had a positive impact on the printing sector. In the field of printing, the need for qualified work force that can use computers and automatic printing machines is increasing day by day. Those wishing to be employed in Pre-Printing Operations field; can be employed in in medium and large scale printing houses, books, newspapers, magazines, posters and brochures preparing processes and in promotion sector for the production of printed materials. Offset printing system is used widely in Turkey. Working area is expanded by the existence of various types and sizes of offset printing machines. It has the opportunity to work in the public and in the private sector. Serigraphs; can work in various printing companies' serigraphy workshops, printing factories of textile factories, ceramic-glass workshops, factories manufacturing electronic circuit, and factories producing weaving and wallpaper.

Pad Printing is a special working area. They apply printing process of special surfaces. They print on three dimensional surfaces, irregular plastic materials. It has wider employment choices in areas where manufacturing sector is widespread. Flexo printing operators have opportunities to seek job in packing industry. Flexo printing system is widely used for printing of raw materials made of nylon. For many sectors, packaging the products in the most appropriate way is important not only for legal requirements but also for marketing policies. There is opportunity to find job in our country where production and manufacturing takes place. Gravure printing machine operators mostly used in the fields of packing industry and valuable paper printing areas. They print on packages in food industry. For this reason, there are opportunities to find jobs in regions where the food sector has developed.

31. Metal Technology

Since 2006 students acquired with required qualifications where metal and metal alloys are shaped as hot and cold, heat treatments are applied, welding applications are made, mechanical and automatic cutting, bending, drilling and joining, metal and plastic joinery, metal decoration applications and steel constructions are applied in the field of Metal Technology. Students in the field scope delivered training for *Steel Construction, Heat Treatment, Welding and Metalworking* in line with their skills.

Metal sector in Turkey is rapidly developing and growing. Small, medium and large-scale enterprises need a large number of qualified staff. Field graduates can be employed in factories producing automotive and information technology products, shipyards, bridge and dam works, their own workshops, public institutions and organizations in indoors or outdoors.

32. Metallurgy Industry

Students delivered training on mold and core making, metal melting and casting, work piece cleaning, basic mould core production, metal melting and casting, coke production, raw iron production, steel production, quality control and heat treatment in the field of Metallurgy Technology. In the field training is delivered for *Casting and Melting* branches.

In the metallurgical sector, there is a rapid production increase at the sector level. Therefore there is need for vast amount of qualified staff knowing and loving this profession. Graduates having completed their training and acquiring the required qualifications in business life may build career in enterprises dealing with metallurgy. They work in closed environments such as factories and foundries operating in the field of metallurgy.

Graduates are employed in small and medium-sized foundries in big enterprises (such as iron and steel plants) in the industrial and manufacturing sectors in the factories operating in the field of metallurgy.

33. Meteorology

By 2008, it is aimed to acquire qualifications to students for to educate the staff who have the knowledge of technical equipment and foreign language according to the world standards, meteorological observation and measurement, record keeping, coding, data processing, forwarding reports, air analysis and forecasting, forecasting and forwarding of products in the field of meteorology.

Graduates are employed General Directorate of State Meteorological Affairs, central and provincial organizations, General Directorate of State Hydraulic Works, Electrical Power Resources Survey and Administration, Ministry of Agriculture and private airline companies.

Branches in Metallurgy Branch
- Meteorological Observation and Forecast

34. Furniture and Indoors Design

Students delivered training for acquiring qualifications of planning the interior layouts and drawing with the computer, making the production of interior and furniture elements, carving of furniture decorations, turning and inlaying, making furniture frame and flooring, production of woodwork since 2006 in the field of Furniture and Interior Design. Training delivered in the fields of *Woodworking Technology, Interior and Furniture Technology, Furniture Skeleton and Upholstery, Furniture and Decoration Arts and Furniture and Interior Design* branches.

This sector rabidly develops and expands in Turkey. Small and medium-sized enterprises are becoming increasingly institutionalized and a significant amount of staff is needed in this area. Graduates reaching required information and skills by completing their training may build career enterprises dealing with furniture and interior design. Among the enterprises where graduates are employed are furniture factories, their own workshops, public institutions and organizations.

Branches in Furniture and Interior Design
- Woodwork Technology
- Interior and Furniture Technology
- Furniture Frame and Upholstery
- Furniture Ornamental Arts
- Furniture and Interior Drawing

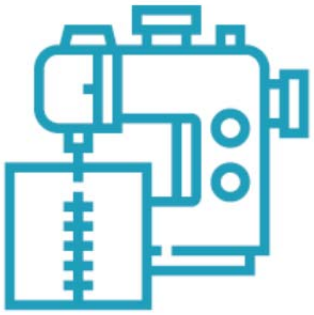
35. Fashion Design Technologies

Since 2005 it is aimed for the students to acquire qualifications for machinery, tailoring, maintenance and repair of garment machines to be used in clothing design, garment production in the field of Cloth Production Technology. In this field training is provided in nine branches as *Leather Clothing, Men's Tailoring, Ready-to-Wear Model Machinery, Underwear Modeling, Women's Tailoring and Cutting and Garment Machines Maintenance Repair and Modeling*.

Branches in Fashion Design Technologies Field

- Leather Clothing
- Men Tailoring
- Ready Wear Model Machinery
- Underwear Styling
- Women Tailoring
- Textile Machines Maintenance and Repair
- Modeling

Cloth production technology industry due to its labor intensive nature provides employment for hundreds of thousand in tens of thousand workplaces. Positive impact of the developments in this area on the welfare of the society cannot be denied. Graduates with the necessary qualifications in business life by completing their education can build a career in enterprises related to clothing production. Graduates can work in ready-made garments, fashion houses, tailors, own workshops, public institutions and organizations. Those wishing to be employed in Cloth Production Technology field, can work in ready-made garment manufacturing enterprises in private sectors, garment machines manufacturing and technical services in apparel machines or in their own workshops.



36. Motor Vehicles Technology

Branches in Motor Vehicles Technology

- Construction Equipment
- Automotive Painting
- Automotive Electromechanical
- Automotive Body

Students delivered training since 2006 for acquiring qualification for maintenance and repair of mechanical, electrical and electronic components, repair of automotive body parts, painting and painting on body surfaces, maintenance and repair of work machines on automotive in the field of Motor Vehicles Technology field. Training delivered in *Construction Machinery, Automotive Paint, Automotive Electromechanical and Automotive Body* branches.

In Turkey for, quality process and high efficiency in motor vehicles sector it became a new production center for international markets. In the sector, more investments are made on technology, human resources, information and quality education. Professionals in this field work in indoors such as automobile factories, automobile maintenance services repair and maintenance workshops.

They work in equipment and conditions in international standard with technologic tools and machines. Automotive painters generally for inside paint cabinets. Workers dealing with construction equipment can work both in indoors and outdoors. Graduates of this field can be employed in motor vehicle manufacturing factories, motor vehicle maintenance and repairing authorized and special services, public vehicle maintenance and repair workshops and motor vehicles sector in various enterprises.

37. Accounting and Finance

Training in the field of accounting and finance delivered to students since 2006 for acquiring qualification for establishment foundation, classifying , recording, filing and archiving documents for activities, reporting, analyzing, foreign trade legislation, customs procedures, accounting records, finance and stock exchange services in the field of Accounting and Finance. Branches to be preferred by the students in the scope of the field are *Computer Aided Accounting, Foreign Trade Office Services and Finance and Stock Exchange Services*.

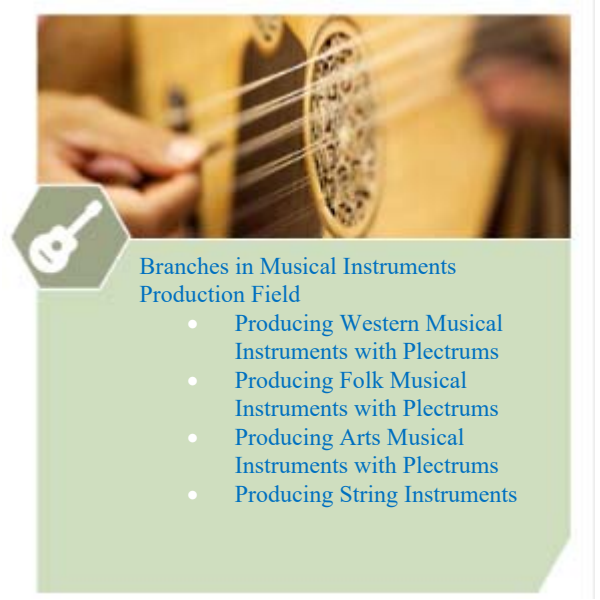
Accounting, finance and stock exchange services are an indispensable part of all sectors. In parallel with technological developments, this profession continues to evolve and change at the same pace. Accounting and financial services are done in computer environment. Department graduates can work in accounting and financial consultancy offices, relevant departments of foreign trade and finance institutions and accounting services of commercial enterprises.

Moreover they can be employed in financial departments of every kind of institution. The profession has quite a wide working field.

38. Musical Instrument Production

Students delivered training intended to acquire qualifications for playing *Bağlama* (a musical instrument with strings), making carved "*cura*", "*çöğür*" and "*bağlama*", playing lute, producing lute, *tambur* and lute, playing guitars, producing mandolin, classical guitar and acoustic guitar, playing violin and producing classical fiddle, violin and viola. Branches delivered training since 2006 are *Producing Western Musical Instruments with Plectrums, Producing Folk Music Instruments with Plectrums, Producing Art Music Instruments with Plectrums and Producing String Instruments*.

After completing their education, the vocational personnel who gain the necessary qualifications in their business life can make a career in musical instruments related businesses. They can work in public institutions and organizations. Graduates can easily find jobs in small-scale instrument making workshops in our country and they can open their own workshop with low costs.



39. Marketing and Retail

Students delivered training intended for acquiring qualifications for conducting sales operations, conducting stock activities and related documents, determining goods, life and other insuranceable risks, selling insurance policies, performing damage follow-up, buying, selling, leasing and real estate related sales, execution of sales transactions, meet customer expectations by applying controls, departmental layout, food hygiene since 2006 in the field of marketing and retails. Students in this field can be trained in *Real Estate Brokerage, Sales Representation and Underwriting* branches.

These profession members may find job in public sector and also in private sector besides graduate's employment rate is higher.

40. Plastic Technology

Students delivered training since 2005 for acquiring qualifications for plastic production technologies and production process, plastic mold technologies and mold production in the field of Plastic Technology. Students in the field can be trained in *Plastic Processing and Plastic Mold* branches in line with their choices and skills.

Plastics are used in industry as indispensable materials because they are light, durable and easy to form. Ease of forming, electrical isolation properties and being inflammable makes plastics indispensable in the daily life. Turkey's geographic position being in the point where Europe and Asia meets provides advantage for the gradual increase of Turkish export in plastic industry. Turkish plastic products are exported to 124 countries around the world. Plastics have a wider usage area such as all kinds of durable consumable material, automotive parts, packing material, pipes, furnishings, textile products, shoes, original hardware parts.

In plastic sector newly developed in Turkey keeping a significant place in world economy and industry profession members has a rich job winding opportunity. Quality production, equipped with adequate knowledge and skills, requires qualified staff. For that reason, demand for well-trained plastic technicians and plastic molders is constantly increasing. Persons trained in Plastic Technology are employed in public or private sector enterprises.

41. Radio and Television

Training delivered to students since 2006 aims to develop their qualification for to design virtual and real objects within the framework of the project, to visualize and animate the designs in three dimensions, to prepare them as traceable demonstrations, to perform works and administrative works in the organizations and production companies before the program preparation, after filming shooting stage and after the shooting, to use the basic level technical devices, using the studio, shooting plate and shooting anywhere in the team work recording images with camera, editing in radio-television and production organizations and institutions, using sound and light devices, performing technical tasks according to the instructions of the director in Radio – Television field. The branches in this area are *Graphic Animation, Cameraman and Technical Production.*

Branches in Radio Television Field

- Graphic Animation
- Cameraman
- Technical Production-Broadcasting

Radio and Television Broadcasting is an area where public sector and private sector institutions and organizations produce services in communication activities. In this area, organizations such as radio, television, cinema and production companies, advertising agencies and news agencies are active. Those who want to work in the field of radio and television can work in the television program production and media sector, in public or private radio-television organizations, in the movie studios of film industry, in production companies, in video organizations and in advertising agencies.

42. Rail System Technology

It is aimed to acquire qualifications to students since 2006 for rail system vehicles to prepare for the service and the driver must have the railway systems catenary, signal and communication systems, control, maintenance and repair operations, transportation by rail systems during the transportation, train and traffic planning, operating system use, operating the rail system traffic and passengers -logistic services, rail system roads with the control of the maintenance, maintenance and repair, mechanical, electrical, electronic and computer technologies in rail systems used in conjunction with car maintenance and repair in the field of Rail Systems Technology. Training delivered in rail system technology given under the branches of *Rail Systems Electrical and Electronics, Rail Systems Construction, Rail Systems Operation, Rail Systems Machine and Rail Systems Mechatronics*.

Rail system operator generally works on rolling stock as driver or in outdoors on vehicle or car or in workshops, etc. Rail-system electrical-electronics specialist usually performs the maintenance and repair of signaling and electrical-electronic systems in the land and building.

Branches in Rail System Technology

- Rail Systems Electric-Electronic
- Rail Systems Construction
- Rail Systems Management
- Rail Systems Machine
- Rail Systems Mechatronic

Rail system operator uses traffic management systems, communication (signaling, radio, telephone, fax, etc.) tools and systems. Rail system mechatronic specialist carries out the maintenance and repair works of electric-electronic, hydraulic and pneumatic and communication systems of wagons. In recent years, with the TCDD high-speed train projects, the length of the light rail system public transport lines operating in the municipalities in the metropolitans is constantly increasing and serious investments made in this field. Graduates of the field can be employed in TCDD having vast number of staff requirements and in municipalities' light rail system and tram enterprises and may also they may easily have job opportunities in private institutes and organizations newly entering this sector.

43. Health Services

Since 2008, students delivered training intended on acquiring qualification for providing patient nutrition, using computer office programs, communicating effectively in health services, recognizing the anatomy and physiology of the human body, working in accordance with professional rights and responsibilities, supporting the medical care of the patient, performing personal care of the patient, applying first aid to the patient / injured, aseptic techniques. appropriate work, taking measures against infectious diseases, assisting in prenatal follow-up and delivery, assisting in gynecology and family planning services, protecting newborn and child health, carrying out special care practices, practicing vocational basic practices in the field of health services. Training delivered in the scope of the field are *Assistant Midwife Service, Assistant Nurse Service and Health Cate Technician* S*ervice* which the students shall prefer in line with their skills and interests.

Branches in Health System

- Assistant Midwife Service
- Assistant Nurse Service
- Health Care Technician Service

Field graduates, without public or private sector discrimination can work in in all enterprises rendering health services, in asylums, physical therapy and rehabilitation centers, enterprises rendering home care services, monitoring and medical laboratory centers.

44. Art and Design

Branches in Art and Design
- Decorative Arts
- Interior Decoration
- Plastic Arts

Students delivered training on acquiring qualification since 2006 for landscaping and design, drawing, sculpture and design application, surface ornament and decorative design applications in the field of Arts and Design. Training delivered in the scope of the field is continued in *Decorative Arts, Interior Decoration and Plastic Arts*.

Members of this profession can be employed in interior decoration workshops, architecture and interior design offices, R & D departments of furniture factories, design offices, industrial design workshops, computerized design offices, sculpture workshops, ceramic workshops, production companies, mannequin production workshops, mosaic painting design workshops, graphic agencies , stained glass design workshops, embellishment restoration, textile pattern application workshops, stage and theater decoration, promotion and gift product surface decoration workshops, etc.

Persons trained in the field of Arts and Design, can work in places such as interior decoration workshops, architecture and interior design offices, R & D departments of furniture factories, design offices, industrial design workshops, computerized design offices, sculpture workshops, ceramic workshops, production companies, mannequin production workshops, mosaic painting design workshops, graphic agencies , stained glass design workshops, embellishment restoration, textile pattern application workshops, stage and theater decoration, promotion and gift product surface decoration workshops etc.

45. Ceramic and Glass Technology

Students acquired required information and skills in line with the purpose of producing kitchen utensils to ceramics and glassware required for space technology in the field of ceramic and glass technology. Training delivered in the scope of the field continued since 2006 in seven branches as *Lime Model Mold, Taling, Decorative Glass, Industrial Glass, Free Ceramic Forming, Glaze Decorating and Forming in Lathe*.

The need for ceramic and glass production in Turkey is rapidly increasing. Small and medium-sized enterprises are becoming increasingly institutionalized and a significant amount of staff is needed in this area. Persons trained in the field of Ceramic and Glass can work in in ceramics and glass factories, in small and medium sized ceramics and glass workshops, in public or private sector enterprises.

46. Civil Aviation

There is a need for individuals capable of rapid decision making and having conceptual thoughts and in the meanwhile dominant on operational level activities in the aviation sector where competition getting intense. It is aimed to train qualified and competent individuals to meet this labor force need in the field of Civil Aviation. Training delivered in the field scope continued in the branch of *Ground Services* as of 2015.

Civil Aviation being one of the areas where huge amount of investments are made through public and private sectors with intense global competition is one of the rapid growing sectors in Turkey and in the worldwide. Efficiency to be provided from potential investments being dependent on human sources ensures many opportunities in terms of employment to field graduates with the sector volume anticipated to grow in future.

Graduates having completed their training on Ground Services branch can be employed in various positions in the framework of their qualifications in all airport enterprises.

47. Agriculture

Branches in the Field of Agriculture

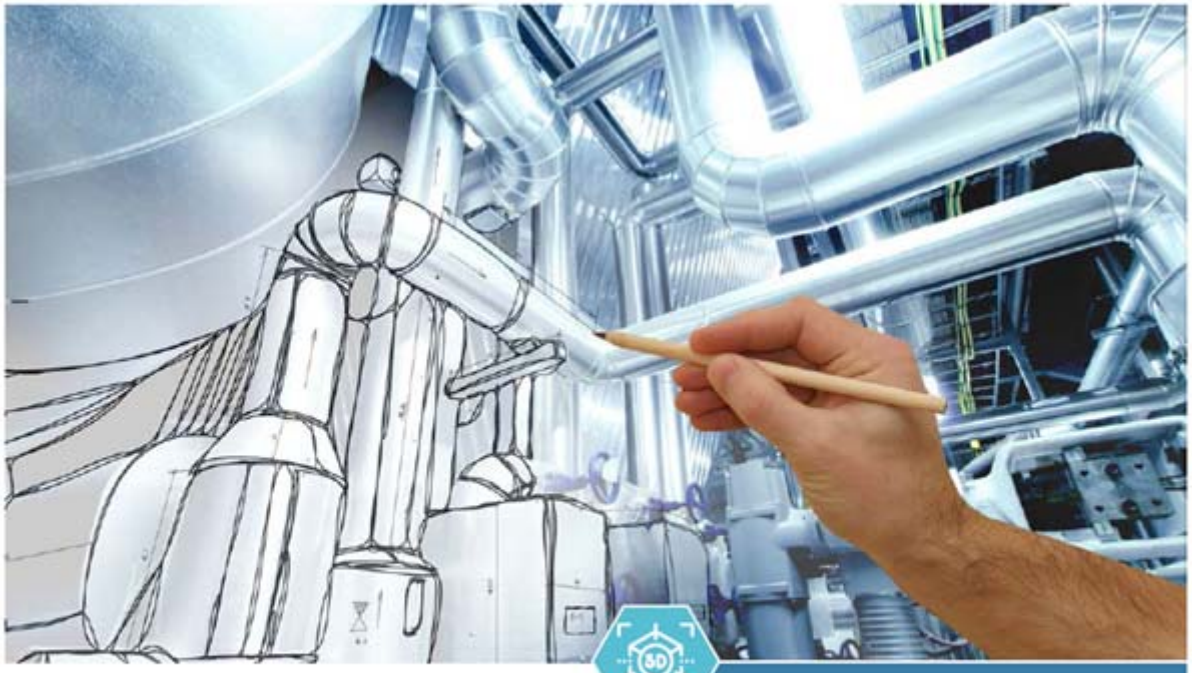
- Garden Plants
- Landscape
- Indoor Plants
- Agriculture Tools and Machines
- Field Crops

Students delivered training on acquiring information and skills since 2008 for production and cultivation of fruits and vegetables, harvesting and marketing, cereals, leguminous seeds, industrial plants grown on fields; breeding meadow, pasture, feed plants and medical and aromatic plants, their care, harvesting and preparing to market, production, care and cultivation procedures for interior plants, outdoor plants and cut flowers, executing horticulture organizations, hand and table decoration, ornamenting creel-crowns, fixed, mobile indoors and outdoors decoration, reading and scaling landscape projects, outdoors plants, constructive and architectural building elements, applying projects on land, grass fields, special garden decorations and land moving, maintenance, repair and operating agriculture tools-machines in the field of Agriculture.

Students in this field given training in the branches of *Garden Plants, Landscape, Indoor Plants, Agriculture Tools and Machines and Field Crops* according to their interests and skills.

Field graduates without discrimination of public institutes and private sector are employed in enterprises dealing with cereal cultivation, legume forages cultivation, industrial plant cultivation, meadow-pasture and feed plants cultivation and medicine and medicinal plant cultivation, fruit, vineyard and vegetables cultivation, mustard cultivation, organic and alternative product cultivation, fruit and vineyard siblings production, seedling cultivation, and vegetable feed producing, interior plant cultivation, outdoors plant cultivation, cut flowers and cut foliage cultivation, landscape studies, grass area and special garden decorations.

48. Design Technologies



Branches in the Field of Design Technologies

- Industrial Products Design

In addition to developing aesthetic and functional products aiming to make life easier, industrial design strives to feed different sectors with new ideas in order to shape the future. Students acquired with required capacities to visually design shape of a furniture to be produced, its, color, pattern and graphical arrangements in the field of Design Technologies. Training delivered to students in this field is realized under *Industrial Products Design* branch.

Field graduates are employed in R&D departments in many industries such as automotive, electronic, communication, furniture, white appliances, advertising, industrial ceramic, exhibition and packing industry where design for every kind of articles made for serial production intended for consumption market. In addition, the training of staff to assist freelance designers is one of the employment opportunities of this field.

49. Textile Technology

Since 2006, students delivered with the required information and skills in order to enable making procedures such as thread production, weaving, knitting and non-woven fabric production and fabric coloring such as panting, printing, chemical finishing in the field of Textile Technology. Training delivered in the branches of *Weaving Couture, Weaving Operatorship, Non-woven Surfaces, Industrial Socks Weaving, Industrial Straight Knitting, Industrial Round Knitting, Thread Production Technology, Textile Printing and Pattern Designing, Textile Finish Procedures Chemical Finish), Textile Painting and Textile Laborant.*

Graduates wishing to be employed in textile field may work in in textile factories, knitwear, socks and knitting workshops and enterprises, yarn factories, pattern offices, weaving, dyeing, finishing, printing workshops and enterprises, textile test laboratories and textile sales points they may also establish their own workshops.

Branches in the Field of Textile Technology

- Weaving Couture,
- Weaving Operatorship
- Non-woven Surfaces,
- Industrial Socks Weaving
- Industrial Straight Knitting
- Industrial Round Knitting
- Thread Production Technology
- Textile Printing and Pattern Designing
- Textile Finish Procedures Chemical Finish)
- Textile Painting
- Textile Laborants

50. Installation Technology and Air Conditioning

Since 2005, students aimed to acquire capacities for assembling, commissioning, failure and maintenance works of plumbing, heating and natural gas indoor installations, household and commercial type coolers, cold rooms and warehouses, refrigerated vehicles and vehicle air conditioners, air conditioning systems and home air conditioning systems in the field of Installation Technology and Air Conditioning. Field training is realized in the branches of *Air Conditioning Systems, Cooling Systems and Building Installation Systems* in line with the interest and skills of the students.

The rapid spread of information on the use of natural gas in Turkey in this sector, is creating the need for trained employees have the skills and certification. Pursuant to paragraph (I) of Article 1 of the regulation on making modification in Natural Gas Market Certificate Regulation of the Energy Market Regulatory Authority (EMRA) published in Official Gazette dated July 21st, 2004 and numbered 25.529 it is specified that "Owners on interior installation and service lines during their activities on natural gas are obliged to employ staff having certificates issued per Vocational Training Law numbered 3308 in their installer permanent staff". Therefore, the natural gas sector increases the need for qualified personnel trained in the field of Gas and Installation Technology. Field graduates can be employed in institutions operating in this profession.

Branches in the Field of Installation Technology and Air Conditioning

- Air Conditioning Systems
- Cooling Systems
- Building Installation Systems

187

51. Aircraft Maintenance

As of 2005, students delivered training intending on acquiring qualifications on operation and maintenance of all electronic systems in the aircraft where the students can specialize on the aircraft body and engine in the field of Aircraft Maintenance. Training delivered to student in the scope of the field is continued in *Aircraft Electronics and Aircraft Body-Engine* branches.

Profession members to be employed in Aircraft Maintenance field; are employed in enterprises such as civil aircraft maintenance centers, military air conditioning maintenance centers, aircraft factories pursuant to the requirements of the labor market. Field graduates have a wide employment area and opportunities getting richer with the steps put forward in the field of aviation. İstanbul Sabiha Gökçen Airport design as Maintenance and Repair Center (HABOM) in 2008 and development in civil aviation; increase employment opportunities in the field. However, private aviation companies are planning to establish their own maintenance centers in various cities.

52. Transportation Services

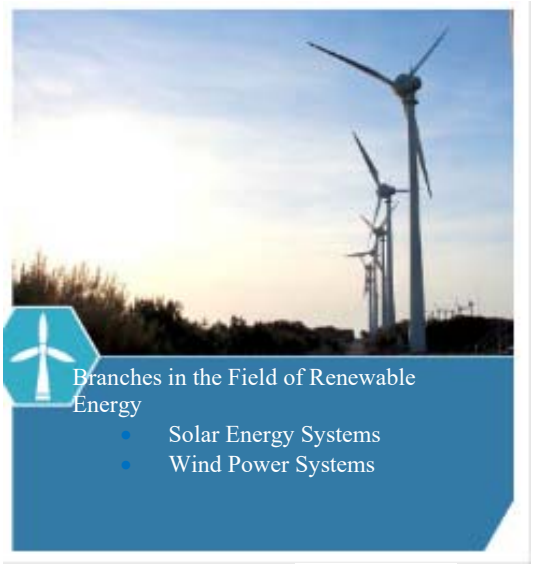
Since 2006, training is delivered to students intended to acquire qualifications for qualifications of transport, storage, customs and other supply chain procedure procedures. Training offered in the field is carried out in the Logistics branch.

With transportation services, products or services are delivered to target markets more economically and quickly. Transportation services contain the spirit of logistic activities. Logistics is now on the agenda of the business world as the ability to move all the organizations and resources in the most harmonious way in order to reach the goal. Logistic field graduates are employed in logistics enterprises, factories, customs operations, import and export companies, warehouses, department stores and organizations per the requirements in labor market.

53. Renewable Energy Technologies

It is aimed to acquire students with the capacities relevant to installation, operation, maintenance, repair and malfunction of small and large diameter power plants producing electricity from wind and solar energy by 2005 in the field of renewable energy technologies. Field students are trained in the branches of *Solar Power Systems and Wind Power Systems* in line with their skills and interests.

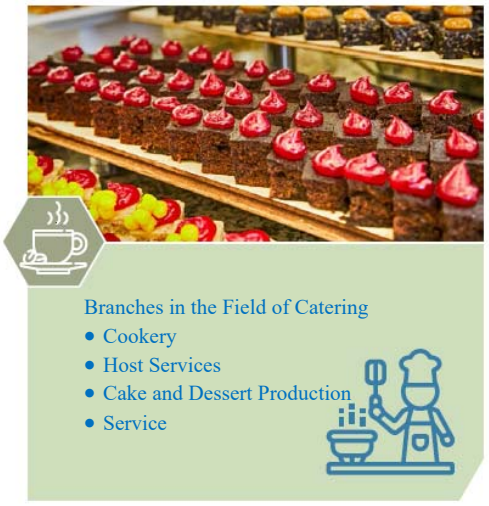
Graduates of the field completing the necessary training in the business life are employed in the enterprises related to the wind power plants and solar power plants.



54. Catering Services

Since 2005, students acquired with the required capacities for making food and drinks ready to be served to guests in compliance with hygiene and sanitation rules in such as hotels, restaurants, cafeterias, patisseries, foodstuffs, transport vehicles (ships, airplanes, trains etc.). Training in the field is carried out in Cookery, Hostess, Cake and Dessert Making and Service branches.

Graduates of the Catering Services are employed in all kinds of accommodation and travel departments related to their branches. Furthermore, they may be employed in fair/congress, bus/train and relevant departments of the airways. There are additional employment facilities in the kitchen, bakeries and all kinds of food and beverage services for graduates.



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