

Restructuring the Turkish Vocational Technical Secondary Education System towards EU membership

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Abstract

The world is going through a rapid transformation process in all fields. Those countries, which cannot keep up with this process, face numerous problems in terms of maintaining the living standards of their citizens. With the priority of enhancing the lives of individuals, the field of education is greatly affected by this process. Therefore in line with Turkey's ambition to become a full member of the European Union (EU), it has been determined that vocational technical secondary education needs "restructuring". Key indicators of the need for this is a mismatch between what the education sector can deliver and demands for a suitably qualified work force. This is coupled with an increasing demand for higher education and close cooperation between the sector and industry. The EU membership process already specifies certain elements which will shape the future organization of vocational and technical education in Turkey. These concern progression from primary education to vocational-technical education, the general structure, content and evaluation of programs, adoption of a more flexible and modular vocational education structure, and establishing curricula with basic vocational standards. These elements have therefore become key determinants of the "restructuring" process. In this article, the current structure of the vocational-technical secondary education system in Turkey is discussed, and the general specifications of the system are compared with that of EU countries. Moreover, certain recent studies, which can be evaluated within the scope of the restructuring, are analyzed and suggestions are made

Introduction

In our globalized world, those countries that have access to knowledge and thus have become information societies tend to enjoy an accelerated path of

development. The successful transition of a country to an information society is evidenced by the ability to compete internationally. In order to participate in today's competitive environment, many countries now find that they are having to commit to a constant stream of change processes or "restructuring" in their education systems, particularly in their vocational technical education.

It is now recognized that vocational technical education is a key driver of the change process and needs a dynamic structure if it is to meet the demands of raising the manpower required by an economy open to change. To prepare students for high-paid and challenging employment, vocational education must take account of the "knowledge revolution", which is changing the nature of work and increasing the skills requirements across virtually all areas of employment. Thus today's employees need to receive both higher levels and different forms of education, with a particular focus on such higher-order competencies as problem-solving, communication, and critical thinking skills. Students need to make a commitment to ongoing training through life-long learning to keep up with technology and product changes in the business world, to be able to move among jobs as necessary, and to guard against job loss because of a skill gap or the replacement of permanent with temporary workers (Jacobs & Crubb, 2003).

Due to the reasons outlined above, vocational education systems are competing in the international arena. The place of countries in the qualified labour force ranking is a significant indicator of being competitive in this area. Unfortunately, Turkey ranks as 37th among the 60 participant countries according to the World Competitiveness Yearbook, 2004 (TISK, 2004). This may be attributed to the various problems in the Turkish Vocational Education system and shows that it has to be renewed and improved in line with the general and particular requirements of its transition to a knowledge economy and as part of a cycle of constant research and development.

With the process of accession to the European Union underway, a great deal of attention is now being paid to the challenges that face the country's education system. Turkey's commitment to restructuring its Vocational Technical Education system (VOTEC) is also being supported by the European Commission and will encompass schools, industry sectors, social and political organizations and public institutions.

In this context, it is useful to refer to the experience of other countries that apply Vocational Education models suited to their own structures and circumstances.

Vocational Education Models

Vocational education is generally classified into three models, namely “the model based on apprenticeship education”, “school-based model” and “the dual model where the school and the organization are involved” (Şahinkesen 1992; 691 - 692). In another classification, the extent to which the state is involved is differentiated according to a market model, a school model and a cooperative (apprenticeship) model. In the market model, vocational education is generally provided by private sector enterprises. The Japanese education system can be cited as an example of this model. In the school model, the arrangements concerning vocational education are executed by the state with the participation of workers, employers and vocational establishments. Vocational education is provided at school or by the private sector with the support of the state. France and Sweden can be given as examples for this model. In the cooperative model which is also known as the dual system, all processes of vocational education are planned with the participation of all parties and the education is provided at both the school and at the workplace. Certain western European countries, particularly Germany, and various southern American countries can be given as examples for this model (Aksoy, 2004; Baloğlu, 1990: 147-152).

Vocational Education in the European Union (EU)

Prior to the industrial revolution, vocational education in Europe was mainly based on the apprenticeship system. Following the revolution, a school-based system developed. However, a gradual increase in demands on the labour force has brought various vocational education models to the agenda. Amongst these, applications which put relations between the school and the workplace in the foreground have become more prominent and are still valid today.

In 1990 the EU Commission made a number of decisions about the future application of vocational education. These can be summarized as follows (Zengingönül, 2002: 6-7):

- All people should have access to lifelong vocational education;
- The quality of vocational education should be increased and exchange programs should be undertaken to help achieve this;
- Discrimination should be avoided; diplomas, certificates, and qualities should be mutually recognized;
- Attention should be paid to the age status of individuals partaking in vocational education;
- General education and vocational education should be planned together.

Fourteen years later in Maastricht, the Ministers responsible for vocational education and training of 32 European countries adopted two basic objectives for the Union (European Commission, 2004):

- Modernizing vocational education and training systems in order for Europe to become the most competitive economy,
- Offering all Europeans, whether they are young people, older workers, unemployed or disadvantaged, the qualifications and competences they need to be fully integrated into the emerging knowledge based society, contributing to more and better jobs.

Since 1990, significant progress has been made in the EU towards closing the gap between general education and vocational education and providing vocational education within a framework of cooperation with enterprises. This was seen as a necessary response to developments in science and technology that have required the rapid adaptation of traditional occupations. However, there are different approaches to vocational education within the EU as can be illustrated by the systems in Germany, France, and the United Kingdom (Education Guardian, 2005; Ertl & Sloane, 2004; Istanbul Üniversitesi, 2004; İdriss, 2002: 473; Mason, Prais & Bart van Ark, 2005; Zengingönül, 2002: 37-74).

Germany

Germany has been characterised as a 'high skills society' with national competitiveness primarily based on high productivity – manufacturing a wide range of high-quality goods, relying predominantly on scientific elites and on high-quality intermediate skills. The country is presented as an exemplar in the field of vocational education. Following compulsory education between the ages of 6 and 15, three quarters of 16 to 18-year-olds are included in the Vocational Technical Education system. This is provided as a one-year full-time or a three-year part-time education. Full-time education is provided within the general education system. At the heart of the German model of skill formation lies the dual system of vocational education and training. For all 15-18 year-olds not in full-time education, the German approach is to offer access to vocational training and qualifications, based on virtually compulsory part-time attendance at vocational school, combined with a traineeship at a place of employment. Enterprises have active roles in the applications with all types of opportunities provided. Other Vocational Technical Education schools can also make use of these opportunities. Around two-thirds of these students are included in the dual system, which is regarded as apprenticeship education. Their programs are locally administered by each state and there exist decision-making mechanisms at various levels. In Germany, people need to enroll on post-16 vocational courses before they can start working as an engineer, a hairdresser or a builder. Since 1990, Germany has made significant investment in its Vocational Technical Education system in an effort to make it more sensitive to globalization and

economic developments. It also strives to offer a democratic and transparent structure based on production.

France

The French approach has been to rely more on full-time vocational education, beginning for some pupils at the age of 14-15 as an option during compulsory schooling. While the number of local organizations in France has been increasing in recent years, the Vocational Technical Education system remains generally a centralized structure, composed of 8 levels, each called a cycle. Compulsory education is provided between the ages of 6 and 16. Within the scope of the harmonization cycle between the ages of 11 and 15, orientation education is given. After the age of 15, students choose between vocational, general or technical high school education. If students pass a test at the end of the third year of their attendance at a vocational high school, they receive vocational education certificates and vocational compliance certificates.

The United Kingdom

The structure of vocational education in the United Kingdom is more complicated when compared to that of Germany and of France. There, the government's approach has been to emphasize university-based education, almost to the exclusion of other provisions. The most influential organization in the country in terms of vocational education is the state secretariat responsible for employment. However, various other organizations are also empowered to play a role in provision. Compulsory education continues until the age of 16. Thereafter students choose one of five alternatives, including colleges offering advanced level vocational technical education and organizations offering in-service and out-of-service courses and training programmes for the youth. It is necessary for these various providers to comply with national vocational standards.

In summary, vocational education starts in these three countries after the age of 16 and is delivered in accordance with vocational standards. There is also private sector participation particularly in Germany. Although there is interaction between them, each of these countries applies a different system that is tailored to their national structures.

In the great majority of EU countries, vocational education is organized in accordance with modular program principles. This approach emerged in the USA for the first time in the second half of the 19th century. In the mid-1970s, it was being applied by ILO projects to train manpower in developing countries. The modular program approach has continued to be used in the belief that it allows vocational education to more fully meet individual differences and

needs, and to be more flexible in terms of its suitability for addressing economic, social and technological changes. While modular programming has been used for the purpose of enabling disadvantaged individuals to acquire skills in more flexible learning environments, it has also been adopted with the aim of helping individuals obtain new skills and making vocational technical education systems more flexible, efficient, productive and coordinative. The modular programming approach is generally used in Germany, Spain, Luxemburg, France, Scotland, and the Netherlands (Bruijn and Howieson, 1995: 83-85; Ertl, 2002: 53; Taşpınar, 1997: 24). With the onset of Turkey's preparations for accession to the EU, there is greater interest in how the general features of its vocational technical education system may be affected by efforts towards harmonization with practices in the European Union.

The Turkish education system consists of two main parts, namely "formal" and "non-formal" education (MONE, 2000).

Formal education provides individuals in a certain age group and level with regular school instruction. Under programs developed in accordance with this aim, formal education is delivered as pre-primary, primary, secondary and higher education.

Pre-primary education is offered on an optional basis to children of 3 to 5, who have not yet reached the age of compulsory primary education.

Primary education is compulsory and offered free of charge in state schools to children between the ages of 6 and 14. Primary education institutions are eight-year schools where continuous education is provided and primary education diplomas are awarded to the graduating students.

Secondary education is provided for at least three years following primary education and covers all education institutions of a general or vocational and technical character. Secondary education consists of three main parts. These are general secondary education, vocational and vocational-technical secondary education. Within the scope of the general secondary education, there are five kinds of schools, namely the Anatolian High Schools, the Science High Schools, the Anatolian Fine Arts and Teachers High Schools, the Evening High Schools and Private High Schools. On the other hand, the Vocational-Technical Institutions of Secondary Education are gathered in seven groups as the Technical High Schools for Girls and Boys, the Commerce and Tourism Schools, the Religious Education Schools, the Special Education Schools, the Private Education Schools and the Vocational Schools of Medicine. In addition to these schools with less and scattered population and in places approved by the Ministry of Education, multi-program high schools that offer Vocational-Technical Education programmes may be opened. Besides preparing students for higher education, these schools also teach occupation and vocation with the

objective of meeting the need for qualified personnel in various professions and to prevent excessive demand for university places.

Higher education covers all education institutions offering at least two years of higher education upon completion of secondary education. Among higher education institutions are universities, faculties, institutes, higher education schools, conservatories, vocational higher education schools and applied-research centers. Faculties and higher education institutions, which are part of universities, admit students according to the results of the standardized examination held once a year by the Center for Student Selection and Placement (ÖSYM) administered by the Higher Education Council.

Apprenticeship Training. Apprenticeship training consists of the training of secondary school students who have completed their primary education but do not have the opportunity for a higher level of education, or those who have remained outside of formal education for various reasons. Young people between 14 and 19 who are primary school graduates are entitled to apprenticeship training. As a result of arrangements made by the Law of Apprenticeship and Vocational Training, the vocational training system has assumed three basic fields of application, which are formal Vocational Training, Apprenticeship Training and Vocational Courses.

Vocational courses are held with the aim of providing employment opportunities for individuals who have left the system of formal education and who lack necessary qualifications. Those who complete formal vocational training may enter for a master's examination after a year of work experience. Apprenticeship Training, in turn, lasts 3 to 4 years. Those who complete this training may enter the journeyman examination.

Vocational Technical Secondary Education in Turkey and the Harmonization Process with the EU

We can describe the development of vocational technical education in Turkey in two phases. Generally, the Vocational Technical Education system met Turkish requirements in terms of quality and quantity from the foundation of the Republic to 1986. Thereafter the previously organic inter-connection between the school and the workplace became systemized with the application of the Vocational Education in Enterprises Programme (VEIE -İŞME). However a number of inadequacies began to be identified with this system (MEB, 1999). These include:

- The number and quality of skills training personnel in enterprises;
- The qualities and employment conditions of coordinator teachers;
- Regional variations in the quality of workplace education;
- The introduction of new technologies and systems;
- The flexibility of Vocational Education programmes to meet demand;
- The quality of instruction in Science, Mathematics, Social Sciences and Communication;
- Matching training outcomes with the expectations of working life;
- Measurement of participants' vocational attainment.

In addressing these problems, the option to simply apply the school model again would be prohibitively expensive. As stated by Şimşek (1998), the average cost per student in general high school was 3.25 times more for male, and 5.85 times more for female technical high school students. General high school provision was also found to be more than twice (2.11 fold) as expensive as vocational education in the tourism trade. Given economic conditions in Turkey, these problems are most likely to be solved within the existing vocational education system if additional private sector investment can be secured.

In addition to the inadequacies of the VEIE programme, significant issues have emerged to affect the overall Vocational Technical Education (VOTEC) system which have led to calls for its "restructuring". These issues include a decrease in the demand for vocational education and an increase in demand for general education, introduction of new regulations regarding the provision of higher education which motivate against the uptake of Vocational Technical Education, a decline in the number of vocational education graduates who can find work in their occupational areas, a general failure of trained manpower to meet the expectations of the workplace, low or unsatisfactory salaries, a gradual decrease in the diversity of available vocational training options, and inadequate development of trainers. Together these factors have created a dilemma for the future of secondary education in Turkey.

Addressing the General Education - Vocational Education Dilemma

While vocational-technical education continues to have an important role in the training of intermediate manpower, arrangements for its delivery are

inadequately structured within the secondary education system. This was recognized at the deliberations of the 15th and 16th meetings of the Ministry of National Education Council (MEB, 1996: 214; MEB, 1999: 177), whose resolutions called for secondary education to be organized as part of a unified structure made up of separate pieces, reflecting diversity and offering a sufficiency of programs with various objectives. At the 15th Council it was agreed that students who had completed 8 years of primary education and wished to continue to secondary education would first receive one year of preparation and orientation. This would expose individuals to technology and the modular program approach and help them to determine and prepare for their occupational and higher education futures prior to entering vocational-technical or general education. While these recommendations have not been fully implemented, initiatives such as these recognize that while the system is organized in a modular structure in the context of diplomas and certificates, it should have an organization structure which supports both horizontal and vertical transitions in learning and skills.

Diversity of Schools

The VOTEC system in Turkey currently comprises Vocational High Schools, Technical High Schools, Anatolian Vocational High Schools and Anatolian Technical High Schools for the secondary education system. The statistical data for the schools is given in Table 1.

Currently, the system suffers from there being too many types of school and program. Such diversity has led to a situation where there exist some applications in which a vocational high school may be opened for a single occupational group. There is clearly an opportunity to re-evaluate Turkey's organization of schools during the process of harmonization with practices in the European Union.

Quality of Manpower and the EU

Turkey has made significant progress to become a full member of the EU and steps towards the harmonization of the VOTEC system have been underway for some time. The system has also been grappling with the need to adapt to on-going changes in the vocational requirements of many sectors. In addressing these challenges, the necessity to improve the quality of Turkey's intermediate labor force has been highlighted. As set forth by Kurt (Kurt, 2003: 23), the average labor force productivity of EU countries is 6-times higher than Turkey. When the objective of free movement of the labor force, which is a key feature of full membership, is considered, there appears to be a severe mismatch between the productivity of Turkey's labor force and the requirements of the EU. This will be further highlighted when the vocational education and qualities of

Turkish labor are recognized and made comparable to European standards.

A momentum of sorts has been established since Turkey's achievement of the status of full candidacy to the EU in 1999. It was included in the European Commission's Leonardo da Vinci and Socrates Programmes, which support projects in the fields of vocational and general education respectively. Turkey's participation was introduced via various preparatory studies that were required prior to implementation of the second phase of these programmes in the period 2000-2006. Within the structure of the Ministry of National Education, the EU Consultation, Administration, Research and Development Committees were formed and several studies are underway to harmonize the national legislation of education with EU law. The projects of "Modernization of the Vocational and Technical Education Institutions", "Reinforcement of the Vocational Education and Training System in Turkey" and "Support of Basic Education" were also commissioned under the Europe Mediterranean Countries Cooperation (MEDA) programmes of the EU (MONE, 2000). Another significant step in this direction is the "Strengthening the Vocational Education and Training System in Turkey Project (SVET -MEGEP)" of the National Ministry of Education with the support of the EU.

SVET Project

The purpose of this project is to remove the gap between the demands of the workplace and the outputs of Vocational and Technical Schools. The project was commissioned in July 2000 with three main objectives (MEB, 2005b):

1. The improvement of the quality and relevance of the VOTEC system through the implementation of a program of national reform, which will include the development of a national qualification system. This will encompass:
 - a) Establishment of appropriate vocational education reform structures
 - b) Analysis of labor market needs
 - c) Development of occupational standards
 - d) Development of training standards
 - e) Development of the national qualification system
 - f) Revision of available curricula
 - g) Development of a life-long learning concept for Turkey
2. The strengthening of institutional capacity at national and regional level and at local level of public administration and representation of social partners and companies.

3. The involvement of local actors in the implementation of the process of reform so as to accelerate the decentralization of the current system.

When the objectives of the SVET Project are reviewed, it is clear that reform of vocational technical secondary education is significant in terms of the overall EU membership process. Establishing VOTEC as an organization in line with employment demands and improving its programmes in accordance with EU vocational standards and norms are of great importance to the future of the economy. The future arrangements for VOTEC will also impact the employment system in Turkey and the free movement of workers in Europe.

Additional measures to tackle unemployment

In addition to training qualified manpower, additional and supporting measures are also required to improve the rates of employment in Turkey. According to the State Statistics Institute (DİE) data (DİE 2004), the employment rate in Turkey in 2004 was 45,8 % and the rate of youth unemployment (for people aged between 15 - 24) was 18,6 %. While high unemployment is a significant problem in terms of EU membership it also affects the demand for vocational education. Therefore, a set of supporting measures that include incentives for foreign investors, diligent application of employers obligations to provide vocational education, improving and applying different employment practices such as flexible working etc. should be developed alongside the SVET agenda.

Trends in Higher Education

The uptake of vocational education remains another key determinant of the future development of VOTEC. According to Board of Higher Education (YÖK) figures, the number of graduates of Vocational and Technical High Schools has been falling steadily in relation to the number of graduates from general high schools. In the education academic year 2001-2002, general high schools accounted for 58% (290.116 student graduates) and 42% from Vocational and Technical High Schools (207.280 students) (YÖK, 2003: 26). In the following education academic year 2002-2003, it was reported that a total of 518,104 students graduated - 64,70 % from General High Schools and 35,30 % from Vocational and Technical High Schools (YÖK, 2004: 32). This figure was precisely reversed in the EU where 36 % were regular High School graduates, and 64 % graduated from Vocational and Technical High Schools (Sağcan, 2004: 24). A major reason for this trend in Turkey is that Vocational Technical Education graduates currently face severe problems in securing progression to employment or further education and training. This is due to a number of factors including the scope of the examination given, insufficient vocational

guidance, and the coefficient which has been applied to the provision of higher education in Turkey. It is claimed that the aim of this application is to pave the way for higher education programs to be more suited to the occupational interests of students in secondary education. The objective seems to be correct in theory. However, there remain significant problems in terms of progression if vocational technical education graduates report that there is almost no option for them but to become a teacher in order to receive an additional two-years of vocational higher education. Currently, University Engineering Faculties seem to prefer to enroll students from general high schools. It is of course true that individuals with developed digital qualifications receive engineering education, but the evidence is that a graduate of Technical or Anatolian Technical High School machinery section, who receives both digital and vocational education, is now actually less likely than a general high school graduate to secure a higher education place in a mechanical engineering department. This trend will continue to negatively affect the demand for vocational technical education in Turkey.

Conclusion and Recommendations

Major transformations in society and the employment situation have profoundly increased the importance of continuing training and vocational skills development in Turkey. Much larger scale continuing training programmes are required than those currently provided in order to underpin and stimulate the processes of economic recovery, conversion and diversification (ETF, 2005). All the while, on a global level, rapid changes in technology and working practices continue. "Programmes for training humans" have become a distinctive element for keeping up with these changes. It is simply not possible for countries who fail to address the requirements of globalization and the information society to secure a place for their citizens in the modern world. Qualified manpower is now a significant component of every country's resources. Vocational technical education is necessary to prepare individuals to achieve the status of Secondary Education Intermediate Manpower within Turkey's manpower development system.

To keep pace with the process of global change, countries are now required to constantly develop and renew their vocational education systems. Turkey has achieved significant progress in the provision of vocational technical education since the foundation of the Republic in 1923. Vocational Technical Education assumed an important role in the development of Turkish industry. However since the 1980s, Vocational Technical Education organizations have failed to keep pace with scientific and technological developments. While this is partly due to economic and political instabilities and their reflection in the education system, its difficulties have continued to increase. In response, a variety of arrangements were put in place over various periods in an effort to overcome

these problems, e.g. OSANOR, LIMME, İŞME, Vocational Distant Education, and various changes were made to the provision of Higher Education in general. While such applications made a contribution towards improvement, they failed to become a comprehensive solution or various problems occurred in their implementation. With this experience, it has become obvious that the system has to be treated as a whole, in other words a complete and comprehensive “restructuring” process has to be performed. Within this context, the following recommendations are offered:

1. More systematic work is required to determine the skills attainment of individuals in Primary Education. The development of individual primary school courses such as Technical, Painting, Music, etc. should be closely monitored and vocational guidance activity introduced at primary level.
2. General education and Vocational education should be planned and considered together and the transitions between the two need to be systemized.
3. Vocational Education should be provided within modular programmes. In doing so, it would be not only be possible to form a Vocational Technical Education system based on qualifications, but also to have vertical and horizontal transitions within the system. Moreover, Vocational Technical Education programmes should have a dynamic structure.
4. The implementation of vocational education needs to be delivered within a coherent quality framework. This would include certification programmes for the training of coordinator teachers and enhanced support arrangements for the important role performed by the participation of enterprises. Together these measures would help to improve the induction of new students, the training of master students, the functionality of practical training and the suitability of enterprise placements to predetermined programme requirements
5. Efforts to determine and harmonize vocational standards should be continued and where necessary new programmes should be established to enable suitable numbers of graduates to achieve these standards. A Vocational Standards Board should be established within which relevant parties may participate. A national vocational certification system should be founded accordingly.

6. The Acquis Communautaire of the European Union should be referred to when considering improvements to Turkish vocational standards. Efforts should be made to ensure equivalence of Turkish documents, certificates and diplomas with that of the EU.
7. More projects should be prepared, particularly within the Leonardo da Vinci Vocational Education Programme supported by the EU, which would enable Turkish students and teachers to take up “exchange and recruitment” programmes. There is also need for further projects to support available infrastructure and investment.
8. The number of school types in Vocational Technical Secondary Education should be reduced. Special attention should be given to the process of establishing technical high schools, and Vocational High Schools for Industry should be affiliated with apprenticeship education.
9. The coefficient system applied to the provision of higher education needs to be completely overhauled so that graduates of vocational high schools are not discriminated against, particularly in terms of their selection for enrollment to Faculties of Engineering.
10. Systematic co-ordination of the vocational education system is necessary in order for it to meet the needs of employers. The expectations of Turkish and EU employers should be determined through research and development studies and a process of continuous improvement applied to all vocational education programmes so that the findings are integrated within learning objectives.
11. Concerned parties should be encouraged to undertake joint studies and to investigate the implementation of modern and flexible employment applications, which have the potential to increase the employment rate for intermediate manpower.
12. A special emphasis should be given to in-service training activities that would assist teachers to improve their vocational knowledge and skills. Furthermore, they should be encouraged and supported to acquire post-graduate qualifications.

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References

- Aksoy, H H 2004, Mesleki eğitim ve yetiştirmede modeller ve planlama [Models and planning in vocational education and training.] Available online at: <http://education.ankara.edu.tr/~aksoy/model.htm#Title> (accessed 30 October 2004).
- Baloğlu, Z 1990, *Türkiye’de eğitim*. (TÜSİAD Yayını). İstanbul: Apa Ofset. [Education in Turkey.] (TÜSİAD Publication). İstanbul: Apa Ofset.
- Bruijn, E D and Howison, C 1995, Modular vocational education and training in Scotland and The Netherlands: between specificity and coherence. *Comparative Education*. 31(1), 83-99.
- DİE, (State Statistics Institute) 2004, *DİE haber bülteni*. [DİE news bulletin.] Available online at: <http://www.die.gov.tr/TURKISH/SONIST/ISGUCU/091204/091204.html> (accessed 14 December 2004)
- Education Guardian, 2005, *Conservatives look to Europe* Available online at: <http://politics.guardian.co.uk/conservatives2001/story/0,1455,567023,00.html> (accessed 10 October 2004).
- Ertl, H 2002, The concept of modularisation in vocational education and training: the debate in Germany and its implications. *Oxford Review of Education*. 28(1), 53-73.
- Ertl, H & Sloane, Peter F E 2004, *The German training system and the World of work: The transfer potential of the lernfeldkonzept* Available online at: http://www.bwpat.de/7eu/ertl_sloane_de_bwpat7.shtml (accessed 17 December 2004).

- ETF, (European Training Foundation) 2005, *The role of vocational education and training in transition countries: The case of central and Eastern Europe and the new independent states* Available online at: <http://www.unesco.org/education/educprog/tve/nseoul/docse/roleve.html> (accessed 30May 2005).
- European Commission, 2004, *Maastricht communiqué on the future priorities of enhanced european cooperation in vocational education and training (VET) 13 – 16 December 2004*. Maastricht – Netherland.
- İstanbul Üniversitesi, (Istanbul University) 2004, *Fransa'da eğitim*. [Education in France.] Available online at: <http://www.istanbul.edu.tr/hay/bolumler/ydeb/ab-egitim/abegitim/24> (accessed 17 December 2004).
- Idriss, C M 2004, Challenge and change in the German vocational system since 1990. *Oxford Review of Education*. 28(4), 473-490.
- Jacops, J & Crubb, W N 2003, The federal role in vocational technical education. *CCRC Brief*, Number 18, 1. Available online at: <http://ccrc.tc.columbia.edu/Publication.asp?UID=85> (accessed 20 June 2005).
- Kurt, H 2003, Türkiye'de verimlilik ve istihdam. [Productivity and employment in Turkey.] *İşveren Dergisi*, 41(9), 23-24).
- Mason, G. Prais S J & Bart van Ark 2005, *Vocational education and productivity in the Netherlands and Britain*. Available online at: <http://www.questia.com/PM.qst?a=o&d=5000148671> (accessed 20 June 2005).
- MEB, (Ministry of National Education) 1996, *Onbeşinci milli eğitim şurası (raporlar, görüşmeler, kararlar)*. [Fifteenth national education council (reports, meetings, resolutions).] Ankara: MEB Publication.
- MEB, (Ministry of National Education) 1999, *Onaltıncı milli eğitim şurası (raporlar, görüşmeler, kararlar)*. [Sixteenth national education council (reports, meetings, resolutions).] Ankara: MEB Publication.

- MEB, (Ministry of National Education) 2005a, *Mevcut sayısal veriler* [Current digital data] Available online at: <http://etogm.meb.gov.tr/sayisal/toplamtablo.htm> (accessed 18 December 2005).
- MEB, (Ministry of National Education) 2005b, *MEGEP nedir?* [What is MEGEP?] Available online at: <http://www.megep.meb.gov.tr/megep/megep.html> (accessed 19 November 2005).
- MONE, (Ministry of National Education) 2000, *National education at the beginning of 2001*. Available online at: <http://www.meb.gov.tr/indexeng.htm> (accessed 17 June 2004).
- Şahinkesen, A 1992, Eğitimde ikili sistem: okul-işyeri işbirliğine dayalı sistem. [Dual system in education: the system based on school-work cooperation.] *Eğitim Bilimleri Fakültesi Dergisi* 25 (2), 687 -701. [Journal of Faculty of Educational Sciences]
- Şimşek, A 1998, Mesleki ve teknik eğitimde yeniden yapılanma.. [Restructuring in vocational and technical education] Available online at: <http://www.tusiad.org/yayin/gorus/36/html/gor36.html> (accessed 17 December 2004).
- Taşpınar, M 1997, *Modüler öğretim yönteminin öğretim yöntemleri dersinde öğrenci başarısına etkisi*, [The effect on modular teaching on student achievement in teaching method course] (Unprinted PhD. Thesis). Elazığ. Fırat Üniversitesi. Sosyal Bilimler Enstitüsü. (Elazığ: Fırat University, Social Science Institute).
- TİSK, 2004, "Mesleki eğitim sistemimiz ve işletmelerdeki beceri eğitimi: sorunlar ve çözüm önerileri" TİSK tarafından mesleki eğitim kurulu'na sunulan rapor. ["Vocational education system in Turkey and skill training in enterprises: problems and recommendations for solutions", the report presented by TİSK to Vocational Education Board] *İşveren Dergisi*, 42(11), appendix to August 2004 publication.
- YÖK, (Higher Education Council) 2003, *Türk yükseköğretiminin bugünkü durumu*. (Mart 2003). [Current status of Turkish higher education. (March 2003).] Ankara: Available online at: <http://www.yok.gov.tr/egitim/raporlar/mart2003/baslik.pdf> (accessed 18 December 2004).

YÖK, (Higher Education Council) 2004, *Türk yükseköğretiminin bugünkü durumu. (Kasım 2004).* [Current status of Turkish higher education. (November 2004).] Ankara: Available online at: <http://www.yok.gov.tr/egitim/raporlar/raporlar.htm> (accessed 18 December 2004).

Zengingönül, O 2002, *Avrupa birliğinde mesleki teknik eğitime yeni yaklaşımlar ve Türkiye için bir uyum analizi.* [The new approach in vocational-technical education in European Union and the conformity analyze for Turkey].Ankara: Kozan Ofset.

Table 1: Statistical Data re Vocational and Technical Secondary Education in Turkey¹

ORGANIZATION TYPE		Education Term (year)	Number of Schools	Number of Students	Number of Teachers
Male Technical Education ²	Anatolian Technical High Schools	5	201	78,174	1,391
	Anatolian Vocational High Schools for Boys	4	231	12.557	661
	Technical High Schools	4	303	24.309	--
	Vocational High Schools for Industry	3	425	290.763	24.474
	Multi-programmed High Schools (Male Tech. Educ. Gen. Direct.)	4	221	63.038	4.563
	Vocational and Technical Education Centers	3	77	28.090	2.684
	Bilateral Vocational Education Centers	3	14	1.219	
	Total		1.472	448.150	33.773
Female Technical Education ³	Anatolian Technical High Schools for Girls	5	1	98	--
	Anatolian Vocational High Schools for Girls	4	190	33.162	2.236
	Multi-programmed High Schools (Female Tech.)	4	140	42.200	2.687
	Vocational High Schools for Girls	3	336	103.854	9.097
	Technical High Schools for Girls	4	18	---	370
	Vocational and Technical Education System (KTOGM)	3	9	1.987	245
	Open Education			29.575	--
	Total		694	210.876	14.534

Trade Tourism Education ³	Anatolian Communication Vocational High Schools	4	13	1.929	117
	Anatolian Hotel. and Tour. Vocational High Schools	4	78	18.217	1.358
	Anatolian Trade High Schools	4	156	20.429	1.627
	Multi-programmed High Schools.	--	247	58.589	3.560
	Vocational and Technical Education Center (KTOGM)	3	3	874	77
	Trade Vocational High Schools	3	314	159.783	8.580
	Distant Education	--	--	30.279	--
	Total		811	290.100	15.319
Total in general		2.977	949.126	63.626	

1. Religious education was not taken into consideration.

2. 2004 - 2005 data was taken as basis.

3. 2003 - 2004 data was taken as basis.

Resource: MEB, 2005a.