( Araştırma Makalesi / Research Article )

Kastamonu Eğitim Dergisi
Kastamonu Education Journal
Mart 2020 Cilt:28 Sayı:2
kefdergi.kastamonu.edu.tr

Başvuru Tarihi/Received: 06.01.2020
Kabul Tarihi/Accepted: 16.03.2020
DOI: 10.24106/kefdergi.704878

# The Linkage between Vocational Education and Labor Market in Turkey: Employability and Skill Mismatch

# Türkiye'de Mesleki ve Teknik Eğitim ile İş Piyasası Arasındaki Bağlantı: İstihdam ve Beceri Uyuşmazlığı

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## Abstract

Countries structure their vocational education and training (VET) systems based on the demands of labor market. As the changes in labor market directly affect VET, VET is the education type which needs transformation in education system to the greatest extent. Although performance of VET depends on the relationship between VET and labor market, this fact is ignored in most countries. Under this circumstance, horizontal or vertical skill mismatches arise predominantly in labor market. When this strong interaction between education and labor market is ignored, policies to eliminate the skill mismatch focus only on VET, issues in labor market are neglected, consequently, problems cannot be solved and on the contrary, these problems become consistent. In this study, VET in Turkey is reviewed in employment and skill mismatch perspectives. Despite the high employment ratios of VTAH graduates, they are employed mostly out of their field of education, therefore, it is seen that horizontal skill mismatch is widespread. On the other hand, skill surpluses in labor market attract a considerable deal of attention. It is suggested to restructure the location and training capacity of VTAHs considering supply-demand balance. Besides, it is suggested to restructure VTAHs in such a way that they concentrate more on academic skills rather than occupationally specific skills, so VET can be more flexible and increase mobility. In addition, in VTCs, where apprenticeship training is provided through a strong collaboration with labor market, it is observed that skill mismatch is at quite low level and it is suggested to increase the capacity of VTCs due to high demand.

**Keywords**: vocational and technical education, employment, skill mismatch, labor market

## Öz

Ülkeler mesleki ve teknik eğitim (MTE) sistemlerini iş piyasalarının taleplerine göre düzenlemektedir. İş piyasalarındaki değişim MTE'yi doğrudan etkilediği için eğitim sistemi içerisinde en büyük dönüşüme uğrayan eğitim türü de MTE'dir. MTE'nin performansı iş piyasasının MTE ile ilişkisine doğrudan bağlı olmasına rağmen çoğu ülkede bu gerçek göz ardı edilmektedir. Bu durumda da iş piyasasında ağırlıklı olarak yatay veya dikey beceri uyumsuzlukları ortaya çıkmaktadır. Eğitim ve iş piyasası arasındaki bu güçlü etkileşim göz ardı edildiğinde beceri uyumsuzluğunu gidermeye yönelik politikalar da sadece MTE'ye odaklanmakta, iş piyasasında mevcut sorunlar görülmemekte, sonuçta sorunlar çözülememekte ve tam tersine sorunlar istikrarlı hale gelmektedir. Bu çalışmada, Türkiye'de MTE istihdam ve beceri uyumsuzluğu açısından ele alınmaktadır. MTAL mezunlarının istihdam oranları yüksek olmasına rağmen ağırlıklı olarak alan dışında istihdam edildikleri, dolayısıyla yatay beceri uyumsuzluklarının yaygın olduğu görülmektedir. Diğer taraftan iş piyasasında beceri fazlalığı dikkat çekmektedir. Mevcut iş piyasasının beceri talepleri göz önüne alarak mesleki ve teknik Anadolu liselerinin (MTAH) lokasyon ve eğitim kapasitesinin arz-talep dengesine göre yeniden yapılandırılması önerilmektedir. Diğer taraftan, MTAH'ların akademik becerilere daha fazla ağırlık verecek şekilde ve mesleki olarak daha spesifik değil, tam tersine mobiliteyi artıracak ve esnek MTE imkanı verilecek şekilde yeniden yapılandırılması önerilmektedir. Ayrıca, iş piyasası ile güçlü iş birliğine sahip çıraklık eğitiminin yapıldığı mesleki eğitim merkezlerinde (MEM) istihdamda beceri uyumsuzluğunun çok düşük seviyede olması, taleplerin yoğunluğu nedeniyle MEM kapasitesinin güçlendirilmesi önerilmektedir.

**Anahtar Kelimeler:** mesleki ve teknik eğitim, istihdam, beceri uyuşmazlığı, iş piyasası

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**Atıf / Citation:** Ozer, M. & Suna, H. E. (2020). The linkage between vocational education and labor market in Turkey: Employability and skill mismatch. *Kastamonu Education Journal, 28*(2), 558-569. doi:10.24106/kefdergi.704878

## 1. Introduction

Vocational education and training (VET) has an important impact on the continuous development of countries. Countries devote much more importance on the quality of VET (Bagale, 2015; CEDEFOP, 2014a; Kazmi, 2007). However, VET becomes on the focus of hot debates in terms of its outcomes. VET is considered as a practical instrument to provide skilled workers into labor markets and increase the ratio of the gainful employments leading to a safety net in terms of human capital theory (Shavit and Müller, 2000).

Priority of VET having stronger linkage with labor market is to prepare students for immediate entry into the labor market (Shavit and Müller, 2000). It is quite important how labor market structured to reward the VET skills just as to extent of VET in providing skills which are demanded by labor market (Korber, 2019, p.203). In fact, if employers participate actively in the design and administration of VET such as in Germany and Austria, VET tends to be more occupation-specific and highly focused on their skill requirements (Shavit and Müller, 2000). Under such circumstances, vocational qualifications have a clearly defined occupational destinations in the labor market. Therefore, in education systems which main actors of labor market actively participate the design and updating of VET, transition period of school-to-work becomes shorter and youth unemployment ratio decreases (Breen, 2005; Müller and Gangl, 2003; OECD, 2010; Shavit and Müller, 1998). In this context, the school-to-work transition depends not only on the graduates' skills they possess, but also on the linkage strength of particular educational pathways between educational qualifications and occupations (Bol et al., 2019).

On the other hand, VET is considered as a mechanism reinforcing the social class reproduction (Collins, 1979; Gamoran and Mare, 1989; Oakes, 1985; Reichelt, Collischon and Eberl, 2019; Ozer and Perc, 2020; Shavit, 1984; Shavit and Müller, 2000). These studies emphasize that the early school tracking separate students according to their academic performance and cluster them into the school types with almost homogenous academic achievements. When students are tracked at early ages, students' academic performance become much more dependent on their social background (Marks, 2006; Reichelt, Collischon and Eberl, 2019). Therefore, the early tracking reduces the equality of education and opportunity by placing lower-class students in vocational track and eventually reducing their chances of attending university or finding prestigious occupations (Gamoran and Mare, 1989; Shavit, 1984). It is also shown that when early tracking leads to segregation of students in schools, probability of disadvantaged students to be "left behind" in these schools increases remarkably (Burke and Sass, 2012; OECD, 2019b; Sacerdote, 2011). Placing lower-class students in vocational track also affects the perception of VET in society negatively because it signals to students that they are less worthy, which in turn dampens their expectations and aspirations for the future (Ozer, Çavuşoğlu ve Gür, 2011; Shavit and Müller, 2000; Vanfossen, Jones and Spade, 1987).

In this context, it seems that there is a trade-off between an effective "safety net" and diversion effect. At this point, we must look in detail at the degree to which VET in any country is an effective means of diversion and/or a safety net (Shavit and Müller, 2000). It is observed all around the world that children of low- and middle-class families or children with low academic achievement are clustered in VET. This circumstance is discussed intensely in context of educational equality in opportunity and social stratification. On the other hand, it is a challenging issue for quality of VET that despite consistent decrease of input, quality expectation from VET's output is high. On the other hand, although expectation is in such a way that the safety net and the diversion effect of VET are opposite, Shavit and Müller (2000) showed that both effects are not opposite, but rather tend to coincide especially in countries where VET is much more occupation-specific. For example, children of skilled workers in Germany follow more likely the vocational track than those from this background in other countries (Müller and Karle, 1993).

Beyond the debate of the safety net and the diversion, VET is also considered as a strong alternative to decrease school dropout ratios of youth who are less interested in academic education or those with low academic achievement (Wolter and Ryan, 2011). It is shown in a recent study, in which UK and Switzerland are compared, VET graduates are more advantageous than those with lower education in terms of employment and income for all of their career (Korber, 2019). This result is valid for both Switzerland with more standard labor market and occupation-specific VET system, and UK with more flexible labor market and whose VET system is less focused on occupational skills. This circumstance shows that VET graduates benefit from labor market advantages more than those with lower education despite the differences in VET systems. On the other hand, graduates of VET have better chance of employment than graduates of academic track especially if both are not eligible for university admission (Shavit and Müller, 2000).

In this study, relations between VET and labor market in Turkey are reviewed in terms of employment and skill match, and policy suggestions are presented to restructure VET on the purpose of decreasing skill mismatch. In this

context, studies which focus on skill mismatch in VET and labor market, and employability statistics in Turkey are considered together for policy suggestions.

**Skill Mismatch, Field-of-Study Mismatch and Penalty**

Recently, the dynamics of the labor market are dominated by automation and artificial intelligence (Perc, Ozer and Hojnik, 2019). Artificial intelligence technology is being pervasive not only within manufacturing, but also in the service industry (Pastore, 2018). Therefore, the labor market changes skill demands more dynamically through devaluating some skills while bringing new skills to the fore (Ozer and Perc, 2020), leading to shortages in one sector and oversupply in another resulting in mismatch in labor market (Johansen and Gatelli, 2012). Skill mismatch is defined as an imbalance between needs of labor market and quality of human source raised by education (CEDEFOP, 2014b). Skill mismatch is of great importance particularly for VET in response to labor market demands. Overqualification or underqualification than the level required for the current job corresponds to a vertical mismatch while mismatches between the field of education and the field of job are related to horizontal mismatches (Bol et al., 2019). The value of qualifications changes depending on the quality of vertical and horizontal matches, directly related to matching performance between education system and labor market. Workers with mismatch suffer from wage penalties (Korpi and Tahlin, 2009; Nordin, Persson and Rooth, 2010). In the vertical mismatch due to overqualification, the penalty seems to be stronger (Montt, 2015; Pedulla, 2016). Although skill mismatch is grouped in two types, both mismatch types are related and they promote each other (ILO, 2017).

On the other hand, the skill mismatch eventually increases the risk in unemployment or leading an employment in lower-skilled jobs. Unbalancing of supply and demand may cause skill mismatch via leading oversupply or shortage of supply as far as education does not meet the needs of labor market. Therefore, the balance between the number of certain qualifications and the number of corresponding available jobs is critical in the mismatch (Bartlett, 2007). Deviations from the balance in either direction would lead to shortages or oversupply of either skills or qualifications, directly influencing the wages (Johansen and Gatelli, 2012). Especially oversupply directs VET graduates to out of their field of education and in this case field-of-study mismatch arises (OECD, 2018; Ozer, 2019a).

On the other side, despite advantage of VET graduates in employment and income at beginning, losing of their skills or negative effects of difficulties which they can experience in meeting recently arising skills in their life-time employment came to the fore in recent studies (Hanushek et al., 2017; Kratz et al., 2019). In this context, Hanushek et al. (2017) first studied the lifetime returns to vocational versus general education by investigating the employment status and income of both vocational and general education graduates, and found that VET graduates have the advantage in employability and income levels immediately after graduation. However, graduates of general education take the advantage in employability and income levels as age increases, indicating that vocational skills somewhat become insufficient against the skills requested by the labor market over time (Hanushek et al., 2017). When the VET is offered in such an occupation-specific way as in Germany, it seems that there exists a trade-off over the lifetime returns. Kratz et al. (2019) attempted to provide more insight into this trade-off based on cohort variations in life course patterns. They found that the advantage of VET graduates is more pronounced across cohorts at younger ages. On the other hand, they also found that VET graduates, especially men show a steeper health decline at older ages, indicating that a part of total effect of VET versus general education works through a faster health deterioration.

Consequently, although occupation-specific VET provides a smooth transition into the labor market immediately after graduation, it leads to a decrease in the mobility between occupations and an increase in the risk of unemployment or employment only in low-skilled jobs in the long-term. Therefore, those who have to leave the occupation for some reasons are exposed to higher risks of unemployment and downward mobility in semi- or low-skilled jobs (Solga et al., 2014).

**Employability and horizontal mismatch of VET graduates in Turkey**

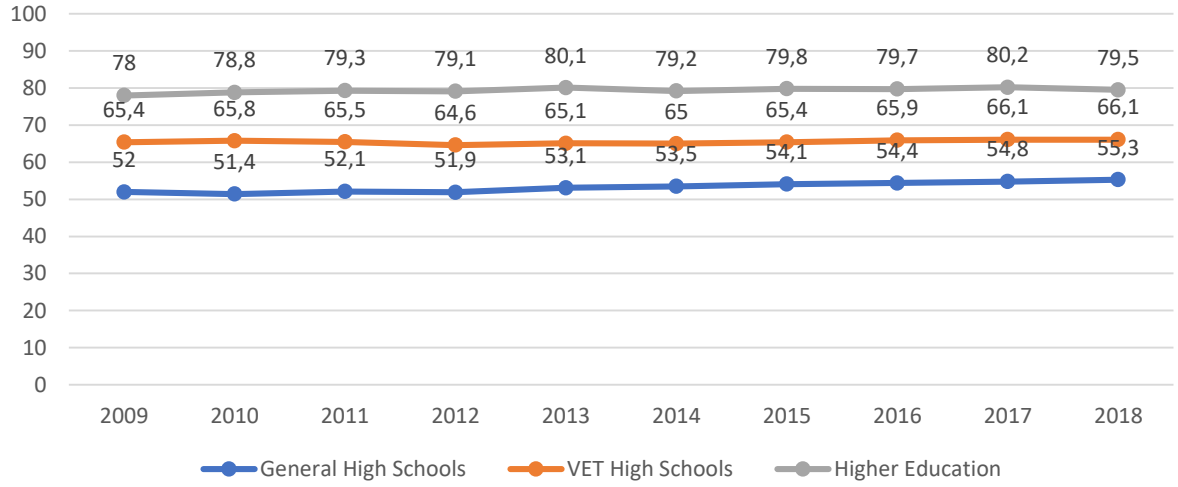
VET is presented through two channels in Turkey: Vocational and Technical Anatolian Highschool (VTAH) and Vocational Training Center (VTC). After secondary school, four years of education opportunity is presented in both of these channels and education in VTC is structured in a way that student take more workplace-centered training. Students in VTC go to school one day per week and continue their skill training in companies in other days. Due to the intense training at workplace, VTC corresponds to apprenticeship training in Germany. Approximately 2 million

students take VET in Turkey and they constitute nearly 35% of students in secondary education (Ozer, 2018; 2019a, 2019b, Ozer and Suna, 2019). More than 90% of VET students take education in VTAH. Approximately 400,000 students graduate from VTAH and 32,000 students graduate from VTC per year (Ozer and Suna, 2019).

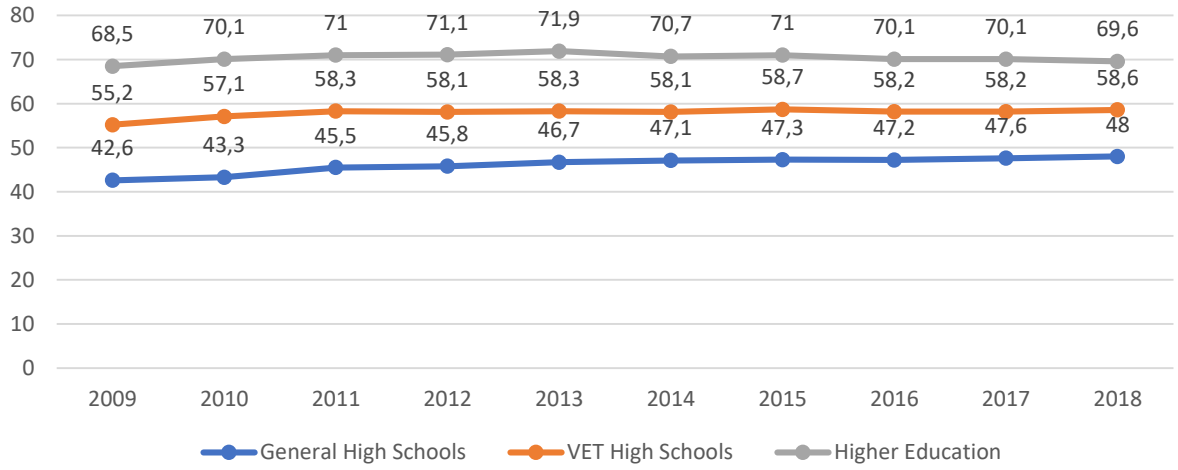
Labor force participation, employment and unemployment ratios of VET graduates in last 10 years are shown in Figure 1. It is seen in Figure 1 that both labor force participation and employment ratios of VET graduates are quite higher in comparison with general high school graduates. Additionally, unemployment ratios of VET graduates are comparatively lower than those in general high schools. On the other hand, although higher education graduates have a considerable advantage in labor force participation and employment in comparison with VET graduates at secondary education level, unemployment ratios of higher education graduates are higher than VET graduates especially in recent years. Consequently, VET graduates are more advantageous in labor force in terms of employment.

**Figure 1. Labor force Statistics of VET Graduates, General High School Graduates and Higher Education Graduates in Last 10 Years*: a) Labor Force Participation Ratio b) Employment Ratio c) Unemployment Ratio**

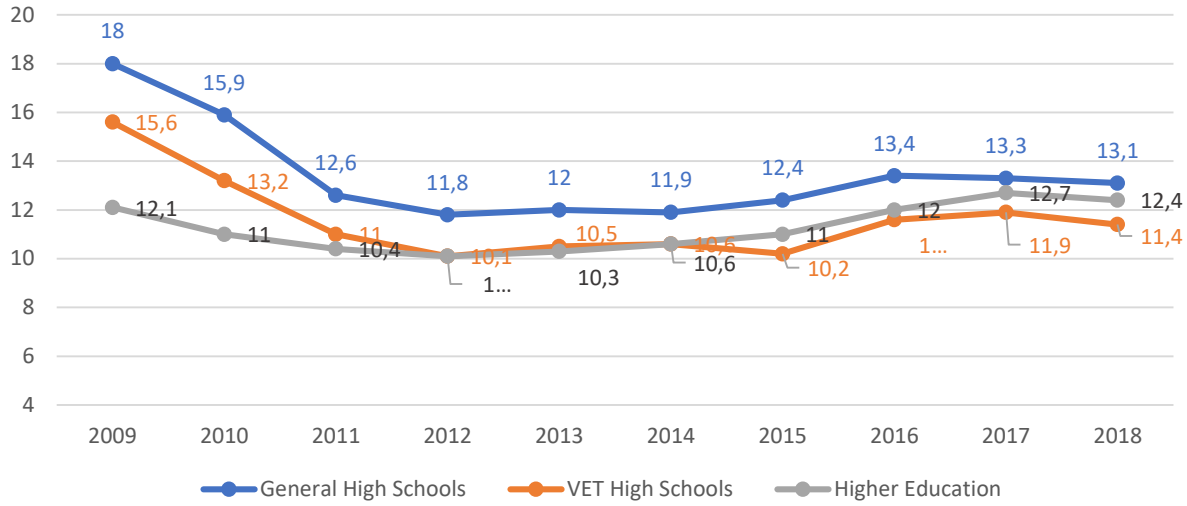
**a. Labor Force Participation Ratio**




**b. Employment Ratio**



**c. Unemployment Ratio**




**Data is retrieved from Turkish Statistical Institute (TSI)*

Employment ratios of graduates of VET, general high school and higher education is given in Table 1.

As seen Table 1, the difference between employment ratios of VET graduates and general high school graduates changes between 18,9% and 20,4% and VET graduates have higher employment ratios between 2014 and 2018 and in 15-24 age interval. Additionally, in 15-64 age interval, the difference between employment ratios of VET graduates and general high school graduates changes between 11% and 11,9%. This result indicates that employment advantage of VET graduates after graduation decreases in long-term.

**Table 1. Employment Ratios of VET Graduates, General High School Graduates and Higher Education Graduates in Diverse Age Intervals between 2014 And 2018***

| Year | Employment Ratio between Ages of 15-24 | | | Employment Ratio between Ages of 15-64 | | |
|---|---|---|---|---|---|---|
| | General High School Graduates (1) | VET Graduates (2) | Difference (2-1) | General High School Graduates (1) | VET Graduates (2) | Difference (2-1) |
| 2014 | 24,7 | 43,7 | 19 | 48,1 | 59,5 | 11,4 |
| 2015 | 25,6 | 44,5 | 18,9 | 48,3 | 60,2 | 11,9 |
| 2016 | 25,1 | 44,3 | 19,2 | 48,2 | 59,7 | 11,5 |
| 2017 | 24,4 | 44,7 | 20,3 | 48,6 | 59,8 | 11,2 |
| 2018 | 24,7 | 45,1 | 20,4 | 49,2 | 60,2 | 11 |

**Data is retrieved from Turkish Statistical Institute (TSI)*

As can be seen in Table 1, at the beginning VET graduates are quite advantageous in employment in comparison with general high school graduates between 15 and 24 ages. In long term, employment ratios of general high school graduates increase approximately 100%, despite of the fact that increase in employment of VET graduates is just under 30% in same time interval. Therefore, labor force in Turkey provides an advantage to VET graduates among young graduates, however, this this advantage changes its direction towards high school graduates as age increases. Same pattern is also observed in VET systems which concentrate on occupational-specific skills (Hanushek et al., 2017). However, labor force keeps relative advantage of VET graduates in both age intervals.

Employment ratios by education level and age intervals between 2014 and 2018 are given in Table 2. It can be seen in Table 2 that, VET graduates are more advantageous throughout their career than those with lower education in terms of employment and income (Korber, 2019). However, elementary school graduates are more advantageous in terms of employment than secondary school graduates in both 15-24 and 15-64 age intervals in recent years. This circumstance shows how low the skills demand by labor force in employment is. On the other hand, it is seen in Table 2 that VET graduates have a quite advantage in employment between ages of 15 and 24, however, this advantage changes it direction towards elementary school graduates as age increases.

**Table 2. Employment Ratios by Education Level and Age Interval between 2014-2018***

| Education Level | Year | Age between 15-24 | Age between 15-64 |
|---|---|---|---|
| Elementary School | 2014 | 21,9 | 49,8 |
| | 2015 | 23,8 | 50,2 |
| | 2016 | 28,2 | 50,6 |
| | 2017 | 36,7 | 51,6 |
| | 2018 | 40,2 | 51,8 |
| Secondary School | 2014 | 12,5 | 50 |
| | 2015 | 14,9 | 41,8 |
| | 2016 | 17,1 | 38 |
| | 2017 | 20,1 | 38 |
| | 2018 | 23,2 | 39,6 |
| VET at High School Level | 2014 | 43,7 | 59,5 |
| | 2015 | 44,5 | 60,2 |
| | 2016 | 44,3 | 59,7 |
| | 2017 | 44,7 | 59,8 |
| | 2018 | 45,1 | 60,2 |

**Data is retrieved from Turkish Statistical Institute (TSI)*

Ratios related with VET graduates in Figure 1 do not provide sufficient information about the consistency between field of education and work. It is frequently complained in Turkey that especially VTAH graduates are employed out of their field of education (Ozer, 2019a; Ozer and Suna, 2019). Ministry of National Education (MoNE) conducted a study on employment of VTAH graduates between 2008 and 2014 to examine current situation in detail (MoNE, 2018). Employment of VTAH graduates within- and out of their field of education for some vocational fields is shown in Table 3 (MoNE, 2018). Despite the fact that employment ratios of VET graduates is high, it is seen that coherence between field of education and work is extremely low, it is even lower than 10% in most vocational fields (MoNE, 2018; Ozer, 2019a). It is also seen in Table 3 that, in-field-employment ratios of graduates are relatively higher in particular specific occupational fields such as aircraft maintenance, electric and electronic technology, law, and laboratory services. However, demand of labor market towards most occupational fields can be compensated with graduates who are employed out of their field of education. Therefore, considerable extent of horizontal mismatch related with VET graduates is experienced in Turkey.

**Table 3. Employment Ratios of VTAH Graduates within- and out of Their Field of Education in Particular Vocational Fields**

| Field of Education | Ratio of VET Graduates Employed in Their Field (%) | Ratio of VET Graduates Employed out of Their Field (%) |
|---|---|---|
| Agriculture | 1,73 | 35,15 |
| Aircraft Maintenance | 17,91 | 39,52 |
| Art & Design | 0,11 | 38,01 |
| Beauty and Haircare Services | 9,88 | 32,15 |
| Biomedical Device Technology | 2,10 | 40,32 |
| Chemistry Technology | 1,89 | 46,31 |
| Construction Technology | 7,85 | 42,58 |
| Electric & Electronic Technology | 9,30 | 44,83 |
| Entertainment Services | 12,28 | 32,46 |
| Law | 7,16 | 22,98 |
| Laboratory Services | 18,28 | 55,76 |
| Machine Technology | 6,10 | 50,51 |
| Marine | 4,61 | 34,98 |
| Metal Technology | 6,59 | 54,66 |
| Motor Vehicle Technology | 8,09 | 50,70 |
| Plastic Technology | 3,70 | 53,07 |
| Rail Systems Technology | 4,74 | 54,17 |
| Textile Technology | 5,57 | 46,04 |
| Transportation Services | 2,00 | 41,27 |

On the other hand, ratios in Table 3 contain only VTAH graduates, they do not provide information about VTC graduates because high school diploma is not provided via VTC graduation. VTC students constitute approximately 10% of all VET students in Turkey. It is found in a study conducted by MoNE (2019) that 88% of VTC graduates are employed in their field of education despite the negative situation in VTAH. Additionally, 75% of graduates who are employed in their field of education are also employed in companies which they take their workplace training during four years. It is seen that apprenticeship programs, which are mostly performed in companies, provide a big advantage in employment.

When high employment ratio of VTAH graduates out of their field of education and higher employment ratio of VTAH graduates in comparison with general high school graduates are considered together, it is strange to observe that VTAH graduates are preferred for work positions which include general skills. Despite the fact that employed position does not necessitate vocational skills, VTAH graduates with advanced handcraft skills can contribute to work with these skills and this situation seems to provide an advantage to employers because this contribution of VTAH graduates is not charged for income.

In countries which VET is concentrated on occupational-specific skills, labor market is organized in a way to force the skills and vocational fields to be in coherence and thus, it awards graduates who work in their field of education and it punishes them when they work out of their field of education. Bol et al. (2019) showed that an expected positive outcome happens only if the worker is in a matched occupation for the graduates of the occupation-specific VET. In other words, a relatively larger penalties exist in strong occupation-specific VET system such as in Germany. This finding also implies that the penalty due to the mismatch would be less in education systems providing more general qualifications where the cost of mobility between occupations is not higher. For example, there seems not to be wage difference for upper-secondary school graduates in case of the mismatch in France, whereas the predicted earning penalty is about 10 to 20 percent in Germany (Bol et al., 2019).

Although VET in Turkey is structured according to German model (Ozer, 2019a; Ozer and Perc, 2020) and it provides similar advantages in employment, a quite different picture appears in skill match within labor market. This circumstance indicates that VET is designed to concentrate on occupational-specific skills, however, labor market does not generate a reward-penalty mechanism which is coherent with VET design. In other words, there is not a significant difference in income level of VTAH graduates when they work in- or out of their field of education (Ozer, 2019a). It is natural that VTAH graduates select to work out of their field of education in some vocational fields with difficult working conditions. If this situation poses a problem, then it is related with organization of labor force, not with education.

On the other side, quite high ratio of out-of-field employment shows also that VTAH supplies skill surplus in labor market. When skill surplus is in existence, graduates tend to work out of their field of education (OECD, 2018; Ozer, 2019a). MoNE prepared Turkish VET Map to reveal the relationship between sectors and available vocational fields in all provinces of Turkey (Ozer and Suna, 2019). Map shows the coherence between sector clusters and available vocational fields is quite low in particular regions. This circumstance indicates that VTAH supplies more graduates than the demand of labor market in these regions. In regions which sector is not present, VTAH graduates, who cannot continue their education at higher education level and those cannot leave these regions, are in search of working out of their field of education. Consequently, findings indicate the excess supply of VTAH in VET in Turkey (Johansen and Gatelli, 2012).

In Turkey, demand for higher education increases every year, and ratio of students, who cannot be placed in any programs and those take the exam again despite they are placed in a program, is higher than ratio of students graduate from high schools and take the exam. This circumstance mainly arises from the advantages of labor market for higher education graduates rather than deficiency or insufficiency of career guidance services for students. Demand for higher education is an important issue for the future of VTAH in Turkey. As can be seen in Figure 1, labor market is quite advantageous for higher education graduates in terms of labor force participation and employment. VET graduates and general high school graduates follow higher education graduates in terms of advantageous position in labor market, respectively. It is seen that higher education graduates are also more advantageous in unemployment ratios except the increase in recent years. Additionally, as can be seen in Table 4, higher education graduates have a remarkable advantage in annual income levels (Johansen and Gatelli, 2012).

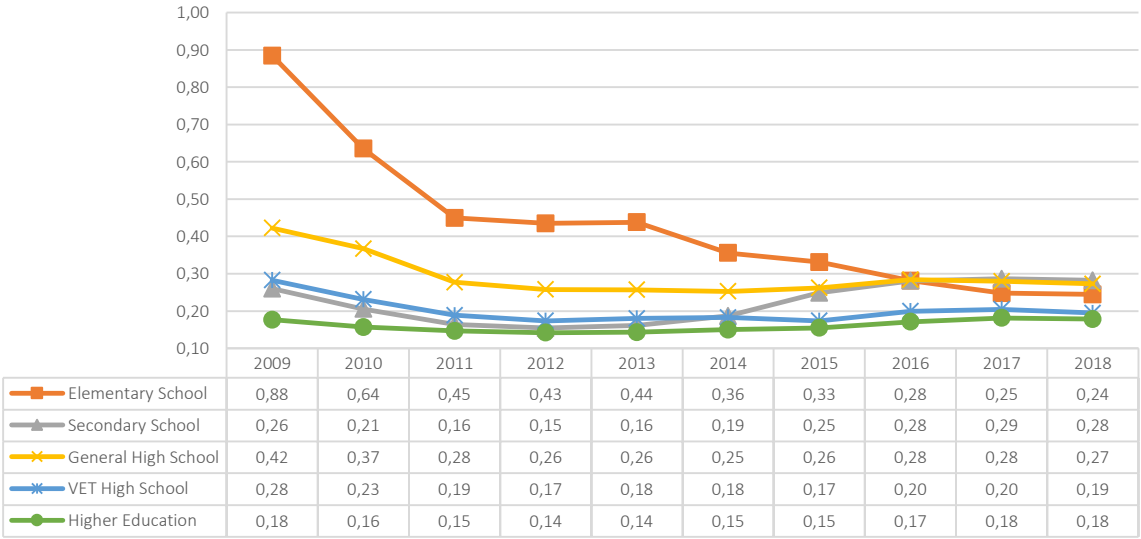
**Table 4. Difference in Average Annual Income by Education Level**

| | Total | Male | Female | Ratio of Difference by Gender |
|---|---|---|---|---|
| Total | 46358 | 47515 | 43866 | 7,7 |
| Level of Education | | | | |
| Elementary School or Lower | 33765 | 35666 | 28294 | 20,7 |
| Secondary School | 33383 | 34702 | 28720 | 17,2 |
| General High School | 35812 | 37334 | 32013 | 14,3 |
| VET | 47532 | 50820 | 36183 | 28,8 |
| Higher Education or Higher | 66786 | 73095 | 58754 | 19,6 |

**2018 TSI Income Structure Study*

As it is seen in Table 4, average annual income of VET graduates is higher than general high school graduates in 2018. However, average annual income of higher education graduates is 40% higher than average annual income of VET graduates. Therefore, VET graduates keep trying to continue higher education despite their low placement ratio to higher education (MoNE, 2018; Ozer, 2019a). This high motivation towards higher education is driving force for tendency of VAT graduates to work out of their field of education.

Unemployment/employment ratios of graduates from diverse levels of education in last ten years are shown in Figure 2. As it is seen in Figure 2, unemployment/employment ratios of elementary school graduates decreased dramatically and reached the same level with higher education graduates and VET graduates in recent years. This change and increase in unemployment ratios of general high school graduates and higher education graduates show that employment opportunities of graduates from lower education levels increased in recent years. Meeting the need of human source with graduates of lower education levels indicates that overqualification is an important issue which is experienced substantially in Turkey.




| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|
| Elementary School | 0,88 | 0,64 | 0,45 | 0,43 | 0,44 | 0,36 | 0,33 | 0,28 | 0,25 | 0,24 |
| Secondary School | 0,26 | 0,21 | 0,16 | 0,15 | 0,16 | 0,19 | 0,25 | 0,28 | 0,29 | 0,28 |
| General High School | 0,42 | 0,37 | 0,28 | 0,26 | 0,26 | 0,25 | 0,26 | 0,28 | 0,28 | 0,27 |
| VET High School | 0,28 | 0,23 | 0,19 | 0,17 | 0,18 | 0,18 | 0,17 | 0,20 | 0,20 | 0,19 |
| Higher Education | 0,18 | 0,16 | 0,15 | 0,14 | 0,14 | 0,15 | 0,15 | 0,17 | 0,18 | 0,18 |

**Figure 2. Unemployment/Employment Ratios by Education Level between 2009 and 2018***

**Data is retrieved from Turkish Statistical Institute (TSI)*

## 2. Discussion and Policy Suggestions

Evaluating performance of education systems independent from structure of business world prevents the clear identification of problems. VET-related discussions in Turkey sets a good example in this manner. For many years, source of VET-related issues is considered as education system itself, and MoNE makes numerous regulations to increase the quality of VET and meet the expectations of business life. Despite all these regulations, it seems that there is no change in content and tone of criticism from business life towards VET (Aytaş, 2014; Gür et al., 2012; Susanlı, 2020). This circumstance indicates indirectly that sources of the issue are not identified accurately. When current data is evaluated as a whole, the most important problem about VET is that although VET in Turkey is structured on

occupationally-specific skills (Ozer, 2019a; Ozer and Perc, 2020), similar to the German VET model, labor market is not structured with a rewarding mechanism for VET graduates as in Germany. In other words, main source of problems is the structural characteristics of the labor market rather than education. To minimize skill mismatch, establishing a continuous interaction between needs of labor market and VET, and monitoring of mismatch indicators are needed. Studies on this issue is not at satisfactory level in Turkey and further research is needed (Gür et al., 2012; Ozer, Çavuşoğlu ve Gür, 2011).

Responsibility of employers is far greater in VET systems which firm-based dual system is implemented in apprenticeship programs as in Germany, Austria and Switzerland. VET in this system concentrates on occupation-specific skills. Therefore, it increases initial productivity and decreases the cost of additional on-the-job training needs (Kriesi and Schweri, 2019). The labor market is also structured in stronger coordination with the educational system there (Müller and Gangl, 2003). Therefore, in VET systems which concentrates on occupation-specific skills and there is a stronger linkage between the field of study and occupation, school to work transition is shorter and VET graduates can be integrated to labor market in a more advantageous and easier way (De Lange, Gesthuizen and Wolbers, 2014; Korber, 2019). Consequently, the linkage strength between education system and labor market is a product of both the school curriculum and organization of the labor market (Bol et al., 2019).

Nevertheless, sectors in Turkey are still far away from other countries about increasing the share of private sector in VET (Ozer, 2019a; Ozer, 2019b). In many countries, ratio of students in private VET institutions is higher than those in public VET institutions (Hippach-Schneider, Krause and Woll, 2007; OECD, 2014). However, students in private VET institutions constitute 5% of all VET students in Turkey despite governmental incentives since 2012 (Ozer, 2019b). It is suggested to develop mechanisms to increase the share the private sector in VET.

Labor market in Turkey provides a remarkable employment advantage to VET graduates during a short beginning stage after graduation. However, this important advantage in the first stage changes its direction towards general high school graduates as age increases. Nevertheless, labor market keeps its advantageous position for VET graduates in comparison with general high school graduates considering 15-64 age interval as a whole. Difference in advantage decreases as age increases.

Despite the fact that VET graduates have an employability advantage in transition to work, out-of-field employment is high in almost all fields due to deficiency of structural rewarding mechanism to award in-field-employment. This circumstance indicates a structural problem. Data, which is given earlier, shows that problem is mostly related with organization of labor market rather than VET. Therefore, developing rewarding mechanisms which awards in-field-employment in labor market should be the first step to increase the attraction of VET. Data in present study showed that although there is no penalty for the skill mismatch and employment out-of-field in Turkey, VET graduates have an advantage in employment.

On the other side, in a study which focuses on skill mismatch in Turkey between 2004-2010 shows that secondary school graduates and employees with no diploma have highest increase in income levels just after higher education graduates (Johansen and Gatelli, 2012). This result also indicates the skill surplus in labor market. In a comparative study which focuses on skill demands of labor market found that demand for low and middle skills is higher than high skills in labor market in Turkey (OECD, 2018). Additionally, it is seen that overqualification is more widespread than underqualification in Turkey (See Fig.8.1 in OECD, 2018). When employment ratio and the skill demands to be employed are considered together, it is seen in Turkey that skill surplus is experienced in VET. This finding supports that more than demanded skills are supplied by VTAH to labor market.

Higher employment and skill match in employment ratios of VTC graduates in comparison with VTAH graduates are also related with skills which demanded by labor market. When skill mismatch of VTAH and VTC considered together it is seen that skills which are demanded by labor market is at the same level with VTC. On the other side, this data indicates the high overqualification ratio in vertical skill mismatch in Turkey (See Fig.2). The finding shows that adults in Turkey use their skills in workplaces less frequently in comparison with adults in OECD countries (OECD, 2019a). Therefore, reevaluating the ratios of VTAH and VTC in VET according to demands of labor market is needed. The share of VATH in VET is approximately 90% and this circumstance leads out of field employment and horizontal mismatch substantially. In this context, since it would result in oversupply, introducing more VTAH will exacerbate the scale of horizontal mismatch by allocating skills less efficiently (Schweri, Eymann and Aepli, 2020). Therefore, decreasing the share of VTAH and increasing the share of VTC will rationalize the supply-demand balance in VET in

Turkey, and educational quality in VTAH will increase due to the more productive use of sources when scale of VTAH decreases.

Determining the regions which VTAH will establish and deciding on the capacity of VTAH is another important area of development. Turkish VET Map which is prepared by MoNE will be an accurate guide for that purpose (Ozer, 2019a; 2019b). Presenting VET in regions where sectors are clustered and considering employment opportunities will increase the opportunity of increasing the educational quality with sectors and empower the employment after graduation. Additionally, it will decrease the tendency of graduates to out-of-field employment and therefore, horizontal mismatch will decrease. After one year period of Turkey's Education Vision 2023 released in late 2018, numerous improvements are implemented in VET system in Turkey. Solid steps to strengthen the VET in Turkey, which is also including Turkish VET Map, are presented in detail in the recent study by Ozer and Suna (2019).

Lastly, it is seen that VET is in a restructuring process due to the dynamics of labor market all around the world. A few foundational characteristics are obtained in nearly all restructuring processes (Ozer and Perc, 2020). Initially, academic and versatile skills are considered as inseparable parts of restructuring of VET (Hanushek et al., 2017; Solga et al., 2014). Additionally, flexible mobility between occupations and empowering the learning ability are vital characteristics of this new process (Sahlberg, 2007). For example Denmark revised the dual VET system, period of workplace education is shortened, weight of standardization of vocational curriculum is decreased to allow more general curriculum and number of occupations which is VET presented decreased in revision process (Solga et al., 2014). This is an important issue which needs to be considered in restructuring of VET in Turkey.

## 3. References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