Problems of Vocational Education and Evaluation of Solution Seeking: A Meta-Synthesis Study[1]

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ABSTRACT

In this study, it was aimed to examine studies which researched problems in vocational education and evaluation of solution proposals by using meta-synthesis method. Data were reached by searching for "vocational education, vocational education problems, vocational education problems and seeking solutions and vocational education in Turkey" from the Turkish Higher Education Board National Thesis Center, and from the Google Scholar and (Turkish Academic Network and Information Center) databases. A total of 54 studies (5 Doctoral dissertations, 11 Master's theses, 30 articles, and 8 reports) were compiled based on criteria determined for studies to be included in the research. The included studies were analyzed according to thematic synthesis approach, which is one of the meta-synthesis methods. Frequency tables of problems and suggestions about vocational education were established by examining the studies. Accordingly, problem titles and solution proposal titles were then categorized as main themes and subthemes and then interpreted. As a result of this study, it was observed that vocational education in Turkey faces some problems, especially with regard to education and training structure, legal regulation structure, technological and physical substructure, economic and social structure, and educational management.

Key Words: Vocational education, Problems of vocational education, Meta-synthesis

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INTRODUCTION

Vocational education can be expressed as a type of education which aims to develop individuals' cognitive, affective and psychomotor behaviors that are required to be considered as qualified and to prepare individuals for their business life through these acquired behaviors. According to other definitions, vocational education is a process of developing individuals in a balanced way with regards to mental, social, emotional, personal, and economic direction by providing them with the necessary knowledge, skills, and application skills required by certain professions, and which are accepted as mandatory for individual and social life (Alkan, Doğan, & Sezgin, 2001). In other words, vocational education is the process of developing intellectual behavioral and physical abilities in order to acquire current skills and knowledge about certain professions, and in order to develop and mature individual behaviors and business-related habits (Şencan, 2008). When these definitions are taken into consideration, vocational education expresses a teaching and learning system that is based on giving individuals the necessary knowledge and skills of a particular business sector. From this aspect, vocational education plays an important role in the social and economic development of a country. Vocational education also has a versatile function in terms of society, business, and also for the individual. Contribution to social wealth and economic development come into prominence in vocational education (TÜSİAD [Turkish Industry and Business Association], 2011). At a functional level, in terms of business there is efficient production, increasing capacity of research, development and rivalry; and in terms of individuals, there is preparing individuals for business life, providing employment opportunities and training according to the market needs (TÜSİAD [Turkish Industry and Business Association], 2011).

The main aim of vocational education in Turkey is to prepare individuals for life, for higher education, to train a qualified labor force as required by the labor market, and to increase the knowledge, skills and competencies of the labor force in employment (Ministry of National Education, 2013). More than the aims of vocational education, it is based on equipping individuals with knowledge and skills, preparation for higher education and for business life. Vocational and technical schools in the secondary education are secondary schools that prepare students as labor force for the business and occupational sectors, as well as preparing students for higher education in terms of general secondary level education.

When the development of these institutions is examined, it can be seen that vocational and technical education in the first years of the Turkish Republic was very weak. John Dewey, one of the experts invited to Turkey in the early years of the Republic, suggested to open secondary vocational schools to enable individuals get a start in business following their elementary education. In order for that to happen, various regulations were invoked by the Ministry of Education, the centralized national education body (Akyüz, 2001; Kazu, 2002). Despite the steps taken towards the development of vocational education in Turkey, vocational education institutions at the level that the country needs have not been realized. Various studies have been conducted in order to create these educational institutions, and different types have been put into practice in the vocational education area, both throughout Turkey and worldwide.

When the historical development of vocational and technical education is examined, three types of education models emerge. The first is the "School-centered Model" in which all education is carried out full time at school; the second is the "Business-centered Model" in which education is applied within businesses full time; and the third is the "Binary System

Model" which was developed on the basis of partnership between schools and business (Adıgüzel, & Berk, 2009; Ministry of National Education, 2013). These models show that considering the history of vocational education in Turkey, in general, the model which has been applied in full time schools is based on the school-business partnership. This model is the most important and the most applicable model for Turkey today. Students study both at school and also attend internship practices in businesses with this model. From this aspect, while students are equipped with theoretical knowledge and skills at the school, they also benefit from the opportunity to apply their knowledge and skills in the business sector. However, it is difficult to say if the expected aims for vocational education have been realized since this model has not been achieved at the desired level. Various studies have been carried out from the first years of the Republic to the current day in order for vocational education in Turkey to reach expected aims. Turkey had tried to revive the binary system with inter-ministerial cooperation in the early years of the Republic, but relations between the business sector and schools weakened in the 1960's as the system did not take into account the needs of businesses. After the 1970's, relations between businesses and schools began to develop once again.

When it comes to the present day, the secondary education system has been restructured, and mainly vocational and technical education, with the enactment of Law 4702 in 2001. Innovations in accordance with the Law are summarized as follows; new programs would prepare students for life and for higher education, and a flexible structure would be created in order to allow lateral and vertical transfer. Also, a decision was taken to establish vocational and technical centers where vocational and technical programs could be applied alongside each other (Kazu, 2002). Compulsory education was then increased to 12 years and secondary schools were reopened for the 2012-2013 academic year. However, vocational education has now reached the high school level with the introduction of the 4+4+4 model and the opening of secondary schools.

According to the current system, 9th Grade vocational and technical high schools apply the same curriculum as general (academic) high schools, and the direct vocational programs start from the 10th Grade. However, in spite of the effective role of vocational education in the development of both the country and society in general, rather than solving problems in vocational education, problems seem to continue to grow day-by-day and the vocational high schools have become somewhat dysfunctional. Although the problems experienced in the Turkish education system and the private sector with regard to the vocational education system have had solutions suggested by several researchers, it cannot be said that the problems in vocational education have been resolved. The inability to resolve problems in vocational education has led to an accumulation of issues facing higher education on the one hand, and on the other it prevents the training of an intermediate workforce to the quality needed by the labor market.

Therefore, it is very important to identify the problems raised in research studies about vocational education, and to develop robust solutions to these problems. The researchers of the current study hope that performing a meta-synthesis study in this field will play an important role in providing a holistic view of the problems faced by vocational education and the suggestions put forward as solutions. In the current study, research related to vocational education was examined and the researchers tried to determine what problems exist in this field, and what suggestions have been put forward in relation to these problems.

When the studies related to vocational education were examined, it can be seen that mostly quantitative methods have been applied along with qualitative methods based on determining the opinions of students, teachers and employers alike.

Purpose of the Research

In the current research, it was aimed to determine what problems were found in Turkish vocational education by examining the research studies carried out with regards to vocational education, in which fields these problems mostly concentrated, and what the suggested solutions for these problems. The results will then be systematically brought together under a meta-synthesis method of study.

METHOD

Research Design

This research is a meta-synthesis study. Meta-synthesis is the synthesis and interpretation of multiple research studies conducted on the same subject. Meta-synthesis aims to examine research with a qualitative understanding of studies conducted in a certain field and to put forth similarities and differences in their comparison, and to thereby create a rich reference guide for researchers, teachers and other interested parties without access to the wider literature (Çalık, & Sözbilir, 2014).

The current study applies the meta-synthesis phases developed by Walsh and Downe (2005), which are;

1. Determination of the scope of study
2. Finding related researches
3. Deciding which studies to include
4. Evaluation of the qualifications of the studies
5. Benchmarking and comparison of studies
6. Coding and classification of studies
7. Synthesis of themes obtained from the analysis

Collection of Data

In order to determine the research to be included in the meta-synthesis study, 2001 was taken as the start year as it was when Law 4702 was enacted for vocational education in Turkey. First, for postgraduate theses (Master's theses and Doctoral dissertations), the database of the Higher Education Council National Thesis Center was searched for titles and keywords "Vocational Education, Problems of Vocational Education, Problems and Solution Seeking in Vocational Education, and Vocational Education in Turkey." Searches were conducted Turkish. Listed theses were then individually controlled, with a total of 71 Master's theses and Doctoral dissertations found that may be appropriate for the aim and purpose of the research. Of these theses, 16 Master's and Doctoral studies were found to have been prepared using qualitative or quantitative research methods that could serve for the purpose of this meta-synthesis study within "inclusion and exclusion procedures."

In the second phase, articles, reports and notifications which included the same keywords and terms were searched using Google Scholar and ULAKBIM academic databases. The listed results of the searches were controlled and, based on "inclusion and exclusion procedures," some were included as studies and research that served the purpose of this meta-synthesis study using qualitative and quantitative research methods.

Within the scope of the current research, a total of 54 studies (11 Master's theses, 5 Doctoral dissertations, 30 articles, and 8 reports) were examined. Inclusion criteria were established in order for the research to reach its intended purpose and to determine its boundaries.

Inclusion Criteria

- Studies must be focused on problems and suggestions related to vocational education,
- Study sample must be within the borders of Turkey,
- Studies must be Master's theses or Doctoral dissertations with access permission in Higher Education Council National Thesis Center or other specified databases,
- Study methods must be specified,
- Study methods and full text of the study must be accessible.

The sources of that take into account the inclusion criteria of the study are given in the Tables 1 and 2.

Table 1. *Master's and doctoral studies included in the research*

Study Code	*Study Name (translated from Turkish originals)*	*Source*
A1	Mesleki Eğitimde İstihdam Sorunları: (İstanbul Örneği)	Vuranok (2017)
A2	Türkiye'de Mesleki-Teknik Eğitimin Mevcut Durumu ve Farklı Ülkelerle Karşılaştırılması	Bolat (2015)
A3	Mesleki Ortaöğretimde Yaygınlık ve Kalkınma İlişkisi: Türkiye Uygulaması	Çalışkan (2015)
A4	Mesleki ve Teknik Liselerde Uygulanan Modüler Öğretim Programının Değerlendirilmesi	Ekşioğlu (2013)
A5	Türkiye'de Eğitim ve İktisadi Büyüme Arasındaki İlişkinin Var Modeli İle Analizi	Özsoy (2007)
A6	Kız Meslek Liselerinde Yaşanan Sorunlar Hakkında Mesleki Eğitim Yönetici ve Öğretmenlerin Görüşleri: Eyüp, Gaziosmanpaşa, Fatih ve Avcılar Örneği	Demirkaya-Aygün (2015)
A7	Türkiye'de Mesleki Teknik Eğitimin Yaşadığı Sorunlar ve Çözüm Önerileri Konusunda Eğitim Yöneticileri Meslek Dersi Öğretmenleri ve Eğiticilerin Görüşlerinin İncelenmesi	Aslantürk (2014)
A8	Meslek Lisesi Öğrencilerinin Okullarına ve Mesleki Eğitime Yönelik Görüşleri	Bülbül (2014)
A9	Türkiye'de Mesleki ve Teknik Eğitim İle İstihdam İlişkisi	Özcan (2014)
A10	MEB'in MEGEP'in İletişim Meslek Liselerin Uygulanması ve Sorunları	Saitoğlu (2010)
A11	Tanzimat'tan Günümüze Türkiye'de Mesleki ve Teknik Eğitim Politikaları	Tosun (2010)
A12	Meslek Lisesi Öğrencilerinin Meslek Seçimi Yeterliliği ve Meslek Seçimini Etkileyen Faktörler	Vurucu (2010)
A13	Avrupa Birliği'ne Uyum Sürecinde Türkiye'de Mesleki ve Teknik Eğitim	Anapa (2008)
A14	Yönetici ve Öğretmen Görüşleri İle Mesleki Eğitim ve Öğretim Sisteminin Güçlendirilmesi Projesinin (MEGEP) Etkililiğinin Değerlendirilmesi	Dursun (2008)
A15	Endüstri Meslek Liselerine Öğrenci Yönelimi ve Eğitim Sürecine İlişkin Öğrenci Görüşleri	Akkaya (2006)
A16	Atölye ve Meslek Dersi Öğretmenleri İle Genel Bilgi Dersi Öğretmenlerinin Dağılımındaki Dengesizlik Nedenlerinin Karşılaştırılması	Serbes (2006)

The studies shown in Table 1 are the 5 Doctoral dissertations and 11 Master's theses completed between 2006 and 2017.

Table 2. *Articles, reports and notifications included in the research*

Study Code	*Study Name (translated from Turkish originals)*	*Source*
M1	Genç İşsizliği Sorununun Almanya ve Türkiye Mesleki Eğitim Sistemi Çerçevesinde Değerlendirilmesi	Aydın (2017)
M2	Mesleki Açık Öğretim Lisesi (MAÖL) Öğrencilerinin Mesleki Eğitime Yönelik Görüşleri	Demirtaş and Tutkun (2017)
M3	Meslek Lisesi Öğretmenlerinin Meslek Alanları Açısından Toplumsal Cinsiyet Eşitliğine Dair Görüşleri	Filiz and Gözelyurt (2017)
M4	Mesleki ve Teknik Ortaöğretim Öğrencilerinin Problem Çözme ve Eleştirel Düşünme Becerileri İle Akademik Başarıları Arasındaki İlişkinin İncelenmesi	Şahin, Kölemen and Erişen (2017)
M5	Türk Eğitim Tarihinin Mihenk Taşlarından Meslek Liselerine Karşı Öğrencilerin İlkokuldan İtibaren Yönelimleri ve Okula Aidiyet Duyguları	Ulusoy and Erkuş (2017)
M6	Türkiye, Almanya, Amerika Birleşik Devletleri, Avustralya Fransa, İngiltere ve Japonya'da Mesleki Ve Teknik Eğitime Öğretmen Yetiştirme	Bolat (2016)
M7	Meslek Lisesi Tercihi Sürecinin Keşifsel Olarak İncelenmesi	Hepkul (2015)
M8	Mesleki Eğitim İstihdam İlişkisi: Türkiye' de Mesleki Eğitimin Kalite ve Kantitesi Üzerine Düşünceler	Erden-Özsoy (2015)
M9	Örgün Mesleki ve Teknik Eğitim Sisteminin Mesleki Eğitimin Paydaşlarınca Değerlendirilmesi	Tamer and Özcan (2014)
M10	Endüstri Meslek Liselerine Öğrenci Yönelimi	Akkaya, Özçatalbaş and Arabacı (2013)
M11	Türkiye'de Mesleki ve Teknik Ortaöğretimin Eleştirel Bir Analizi	Aksoy (2013)
M12	Osmanlı'dan Günümüze Mesleki Teknik Eğitimin Tarihsel Gelişimi ve Günümüz Mesleki Teknik Eğitimine Yönelik Öneriler	Tarlakazan (2013)
M13	Mesleki ve Teknik Eğitimin Dünyadaki ve Türkiye'deki Konumu	Uçar and Özerbaş (2013)
M14	Mesleki ve Teknik Eğitimde Eğitim Modeli Tasarımı	Karabulut and Marul (2011)
M15	Avrupa Birliği Eğitim Politikaları ve Türk Eğitim Sistemi'ne Etkileri	Sağlam, Özdoğru and Çıray (2011)
M16	Sektör Odaklı Mesleki Eğitim, Sektörün İşletmecilik Eğitiminden Beklentileri ve Antalya Örnek Uygulaması	Ardahan (2010)
M17	Ahilikten Günümüze Mesleki Eğitimde Model Arayışları ve Sonuçları	Gemici (2010)
M18	Mesleki ve Teknik Ortaöğretimde Modüler Öğretim Programının Uygulanmasında Karşılaşılan Güçlükler: Nitel Bir Çalışma	Gömleksiz and Erten (2010)
M19	Mesleki ve Teknik Ortaöğretimde Yeni Arayışlar: Yeterliğe Dayalı Modüler Sistemin Değerlendirilmesi	Adıgüzel and Berk (2009)
M20	Cumhuriyet Dönemi Mesleki ve Teknik Eğitim Reformları	Demir and Şen (2009)
M21	Mesleki Eğitim Sorunları ve Yeni Model Arayışları	Altuncı, Salman and Doğan (2009)
M22	Mesleki Eğitimde Okullaşma Oranları Nasıl Yükseltilebilir?	Çalışkan-Maya (2009)
M23	Kız Meslek Liselerinin Günümüzdeki Sorunlarına Yönelik Öğretmen Görüşleri	Demirtaş and Küçük (2008)
M24	Türkiye'de Mesleki ve Teknik Örgün Öğretimin Sorunları ve Yeniden Yapılandırılma Zorunluluğu	Sönmez (2008)
M25	Türkiye'de Mesleki ve Tek Eğitim: Mevcut Durum Sorunlar ve Çözüm Önerileri	Şahin and Fındık (2008)
M26	Teknik Öğretmen Yetiştirme Sorunu ve Teknik Eğitim Fakültelerinin Geleceği	Akpınar (2005)
M27	Avrupa Birliği Sürecinde Türk Eğitim Sistemi: Sorunlar ve Çözüm Önerileri	Gedikoğlu (2005)
M28	Mesleki ve Teknik Eğitimde Arayışlar	Binici and Arı (2004)
M29	Teknik Öğretmenlerin Mesleki ve Teknik Öğretim Programları Hakkındaki Görüşleri (Elazığ İli Örneği)	Kazu and Demirli (2003)

M30	Bilgi Toplumu ve Türkiye'de Mesleki Eğitim	Yörük, Dikici and Uysal (2002)
R1	Türkiye'de Mesleki Eğitim	Korkmaz (2015)
R2	Meslek Eğitiminde Kalite İçin İşbirliği. Mesleki ve Teknik Eğitimde Güncellenmiş Durum Analizi	Aktaşlı, Kafadar and Tüzün (2012)
R3	Mesleki Eğitim Sistemi	Altay and Üstün (2011)
R4	Alman Mesleki Eğitim Sistemi ve Türkiye ile Karşılaştırılması	Özdemir (2011)
R5	Mesleki Eğitimin Etkinleştirilmesinde Sivil Toplum Kuruluşlarının Rolü: İTO Örneği	Develioğlu (2008)
R6	Türkiye'de Mesleki ve Teknik Eğitimin Bugünkü Durumu ve Sorunları	Eşme (2007)
R7	Türkiye'de Mesleki Eğitim Sorunu ve Çözüm Önerisi	Togay (2007)
R8	Türkiye'de Mesleki ve Teknik Eğitimin Yeniden Yapılandırılması	Şimşek (2004)

The studies shown in Table 2 are 30 articles and eight reports. For each, full text access was reached. The research method applied in 46 out of the 54 studies, except for the eight reports that were examined within the scope of the research, is presented in Table 3.

Table 3. *Methods used in the examined studies*

Research Method		*Studies*	*f*
Quantitative	Survey	A6, A7, A8, A9, A10, A11, A12, A13, A14, A15, A16, M4, M8, M10, M12, M15, M16, M17, M21, M26, M27, M29	22
	Experimental	A3, A5, M14	3
	Relational Research	M11	1
Qualitative	Case Study	A2, M2, M3, M7, M9, M18, M19, M22, M23	9
	Phenomenology	M5	1
	Document Analysis	M1, M6, M24, M25, M28, M30	6
	Content Analysis	M13	1
Composite		A1, A4	2
Theoretical		M20	1

As can be seen in Table 3, the survey method included in the quantitative research methods was the most preferred method of the studies examined. The study found that the experimental method (quantitative) was employed in one Doctoral dissertation (A5), and that case study (qualitative) was employed in one Doctoral dissertation (A2), with all others being articles. The two studies in which the composite method was used were both Doctoral dissertations (A1, A4). Survey method was preferred for all Master's theses.

Coding Process

The relevant parts of each work which included a survey were examined in detail and the data obtained was noted. Then the data was rechecked and then integrated. A brief summary of each work (name, year, publication, method, problems, and solution suggestions) was recorded. In addition, each examined study was coded: Master's theses and Doctoral dissertations were coded asA1, A2, A3...A16; M1; articles were coded as M2, M3...M30; and reports were coded as R1, R2...R8. These codes are used throughout the current study.

Analysis of Data

The thematic synthesis approach of meta-synthesis methods was employed for the analysis of the data. In thematic synthesis, recurring themes in premise studies or problems are identified, the themes are then analyzed and results obtained through systematic evaluation (Cruzes, & Dyba, 2011).The thematic synthesis approach consists of three steps: 1) Sentence by sentence coding of premise study findings; 2) Creation of descriptive themes; and 3) Creation of main themes over descriptive themes (Thomas, & Harden, 2008). First, the data obtained from

quantitative and qualitative studies for each theme are presented in tabular form in relation to the theme's aim. The purpose of presenting the data in this way is both visual and to be able to have an idea at first glance about the studies being carried out. Only the frequencies are included in the tables as statistical data. After a general explanation under each of the tables, it was determined how the problems and solution suggestions mentioned in the studies are concentrated and different problems and interpreted, even if they were not the foreground of the study in question.

Validity-Reliability

Considering the three types of validity described by Sandelowski and Barroso (2007), in order to ensure validity in meta-synthesis studies, the current study was conducted within the following validity criteria. The studies were examined studiously in order to prevent errors during the coding exercise. All summary information was recorded. To assure reliability of the codes, the examinations were repeated after a period of ten days, and the reliability level was found to be 91% using the formula [Reliability = number of overlaps / (overlaps + number of non-overlaps)] by Miles and Huberman (2002). Values of 70% or above obtained from this form are considered adequate for proof of reliability (Yıldırım, & Şimşek, 2011). In addition, the study was also examined by other two lecturers; one of whom is an expert in pedagogy, and the other in meta-synthesis. Therefore, the validity and reliability of the data were considered to have been sufficiently confirmed.

FINDINGS

Studies involving problems in vocational education and solution suggestions for these problems were examined under the thematic synthesis approach to meta-synthesis. The obtained findings were addressed under six headings as problems related to education and training, legal problems, technological and physical infrastructure problems, problems related to economy and society, educational management problems, and solution suggestions for these problems. Each identified problem heading was separated into themes by considering the meaning it expresses within itself. In Table 4, problem headings created within findings of studies within research, are presented as the main themes.

Table 4. *Created main themes*

Main Themes	*f*
Problems Related to Education and Training	46
Problems Caused by the Law	29
Problems Related to Technological and Physical Infrastructure	38
Economic-Social Problems	37
Problems Related to Educational Management	36

The main themes were then examined for subthemes within themselves through the codes obtained from each study. In the subsequent sections, each main theme and its subordinate subthemes are explained and interpreted along with the findings.

Problems Related to Education and Training

In 46 of the 54 studies examined, problems related to vocational education were identified as "problems caused by education and training." The themes and codes obtained from the primary studies examined by thematic synthesis are presented in Table 5.

Table 5. *Problems related to education and training (n=46)*

Subtheme	*Codes*	*f*
Teaching Programs	Lack of flexible structure	14
	Not adapting to changing conditions	10
	Not prepared according to sectoral requirements	9
	Not to create programs based on political changes	6
Orientation	Not observing vocational orientation carefully	21
	Non-consideration of student qualifications	9
Student &Teacher Qualities	Low readiness levels of students	7
	Failure to meet changing conditions, failure to renew themselves	9
	Student do not have enough vocational skills	9
	Students do not have enough foreign language skills	3

According to Table 5, the Problems Related to Education and Training theme was classified into three subthemes. In the subtheme of training programs (n=39) it was stated that; the lack of flexible structure in curriculum, the lack of consideration of the sectoral needs while the curriculum is being prepared, lack of adaptation of existing programs for the changing conditions and gain a dynamic structure, the priority of vocational education needs, and programs changes not changing due to ministerial or government changes. In the orientation subtheme (n=37) it was stated that vocational orientation was not done carefully, that students' qualities were not taken into consideration while the orientation was made, serious deficiencies were made in the orientation process, and that occupation presentations were only adequately performed. In research studies about problems related to education and training in the student and teacher qualifications subtheme (n=21), it was emphasized that the students' academic qualifications and readiness levels are low, that teachers and students have difficulties in keeping up with the changing conditions, and that graduated students do not have enough vocational skills and foreign language knowledge.

The following are some of the views highlighting the problems related to the Teaching Programs subtheme:

> *Failing to adapt the technology used in business by missing updates to training programs causes many problems. (A9)*
>
> *It can be said that there is no program integrity in vocational education. (A17)*
>
> *In general, education policies are not conducted in a way that will make it possible for young people to be ready for business. (A1)*
>
> *There is no qualitative and quantitative harmonization between the training programs implemented in formal and non-formal vocational and technical education institutions and the needs of the labor market and skilled technical labor force raised with these programs. (M25)*
>
> *No education policy has been established beyond political party boundaries in Turkey. (M27)*
>
> *It has been determined that current vocational and technical education programs do not take into consideration the interests, needs and individual differences of the students. (A2)*

> *There are some problem in realizing the aims of programs though learning activities applied in the classroom that are compliant with social, sectoral and individual needs. (A4)*
>
> *In today's system there are serious differences between the qualifications gained in vocational schools and the needs of the industry. (M28)*
>
> *Theoretical education in the school and practical training in the workplace do not fully support each other. (M14)*

The following are some of the views highlighting the Orientation subtheme:

> *It has been determined that there are deficiencies in the professional orientation process. (A7)*
>
> *While a significant number of young students prefer vocational education voluntarily, the most effective people in the vocational field choice process are their family members and other people in their surroundings. The influence of teachers and guidance services in schools in the field choice process is extremely limited. (A1)*
>
> *Although it is mentioned in Turkey that vocational orientation has been carried out since the second period of primary education, the reality of the practice is doubtful. Guidance services given to schools are also inadequate for individuals to choose the right vocation. (M25)*
>
> *Despite the introduction of occupations and studies in the field of guidance starting from primary education, they remain just a sample and do not provide a functional contribution. (M14)*

The following are some of the views highlighting the Student and Teacher Qualifications subtheme:

> *With a low level of academic readiness of vocational high school students, the number of students attending classes has decreased. (A6)*
>
> *It is seen that the program has deficiencies, and students are not trained to meet the needs of the business sector. (M18)*
>
> *As a result of the lack or late transfer of necessary materials in workshops where the students are trained for work and skills, students are sent to businesses with imperfect knowledge and they face various difficulties. (M17)*
>
> *Teachers expressed that 80.9% of students who came to vocational high schools are insufficient in Turkish/mathematics knowledge. (M9)*
>
> *While students who finish secondary school with high academic distinction mostly prefer general secondary education schools, those who finish with intermediate or low academic achievement prefer vocational and technical education schools and institutions. (A8)*

When the problems highlighted in the theme of education and training is taken as a whole, the first notable point is that the curricular programs do not have a flexible structure. The lack of a flexible program structure makes it difficult to keep pace with changing conditions. Also it is seen that vocational orientation is seen as significant in the problems. The problem of orientation can be interpreted as not only related to vocational education, but also a problem in secondary schools. The realization of a healthy orientation in secondary schools may be a

solution for many important problems in vocational education. In terms of the quality of students and teachers, the lack of adequate occupational skills and the inability to adapt to developing technology are seen as an important problem. This problem can be interpreted as relating to academic success taken into consideration rather than interest and ability for student choice in vocational high schools, and that generally academically less successful students are directed to vocational high schools. Inadequate in-service training for teachers and, taking today's conditions into consideration, the lack of adaptation to technology which evolves rapidly and affects all vocations, can be expressed as a serious deficiency.

Problems Caused By Laws

In 29 out of the 54 studies, "legal problems" were considered when determining problems in vocational education. The subthemes and codes obtained from the primary studies examined by thematic synthesis approach are presented in Table 6.

Table 6. *Legal problems (n=29)*

Subtheme	*Codes*	*f*
Examination System	Being disadvantaged in transition to higher education	18
	Spreading problems in secondary education to higher education (open admission)	9
	Having the distinction of general education, vocational education / Binary structure problem	4
Structure of Vocational Education	Excessive diversity in secondary education	3
	Vocational criteria and the duties and responsibilities of graduates not sufficiently determined	3
	Education is centralized	3
Bureaucracy	Lack of legal regulations	4
	Bureaucratic challenges	3

According to Table 6, the Legal Problems theme was split into subthemes of examination system (n=27), structure of vocational education (n=13), and bureaucracy (n=7). It was stated that students who trained under vocational education in transition to higher education are disadvantaged, and also that open admission, which was put forwards as a solution has just carried problems forward from secondary education to higher education. Serious problems have been caused with excessive diversity in secondary education, education being centralized and cannot been localized, the binary structure of general education, and the duties and responsibilities of graduates not sufficiently determined, and the failure to create vocational criteria. It was emphasized that the lack of legal regulation in vocational education and the bureaucratic difficulties are also a source of problems in vocational education.

The following are some of the views highlighting the problem of the Examination System subtheme in relation to legal problems:

> *With the application of coefficients, the qualifications of students who prefer vocational and technical education have fallen, the quality of education has deteriorated, and the number of qualified personnel has been reduced. (R5)*

> *Vocational high school students have encountered considerable disadvantages even in entering engineering faculties in their field, and the vocational high school has crashed. (M25)*

> *It seem that vocational high school students pass to the VHS [vocational high school] with open admission and it had subsequently reduced their qualifications. (A7)*

> *Unlike Turkey, undergraduate and graduate programs in other countries are attending vocational-technical education. (A2)*
>
> *Integrity and continuity between vocational and technical secondary education programs and higher education programs are not fully achieved. (M1)*

The following are some of the views highlighting the Structure of Vocational Education subtheme in relation to legal problems:

> *Especially the unwieldiness of the centralist structure has caused many problems that continue to this day. (A9)*
>
> *Inability to determine vocational standards in vocational education and the application of traditional methods disconnected from business life in the creation of curriculum programs emerges as one of the reasons for the inadequacy of vocational education. (M25)*
>
> *It is stated that socioeconomic distinction between schools and school types in secondary education is intense, and that schools in secondary education are classified according to the socioeconomic level of families. (R2)*
>
> *There are a large number of vocational high schools in the secondary education system in Turkey and it poses a serious problem. (M14)*

The following are some of the views highlighting the Bureaucracy subtheme in relation to legal problems:

> *Students who reported negative opinions about the field they were studying expressed that they do not like their vocations, their working conditions are heavy and they do not see themselves as adequate. (A8)*
>
> *It seems Law 3308 on vocational and technical education is inadequate to meet the need. (A7)*
>
> *Businesses train their labor force with their own resources and this leads to questioning the purpose of the vocational schools. (M26)*
>
> *Among the countries examined in the research, legal institutions in business for vocational and technical education in countries except Turkey, have very strong and broad authorities. (A2)*
>
> *It seems that vocational high school graduates have problems about their academic qualification title. (A7)*

This theme differs from the other themes in terms of the source of the problems. Generally, when the Turkish education system and legal regulations constitute mandatory rules, laws and regulations must be revised in terms of focal point and solution of these problems. It can be said that while these changes and regulations are being implemented, it is important that the opinions of the joint owners must be taken into consideration, and that implementations of pilot applications are executed with different alternatives.

Common Problems Related to Technological and Physical Infrastructure

In 34 out of the 54 studies, problems of vocational education were identified as "problems caused by technological and physical structure." The subthemes obtained from the primary studies examined by the thematic synthesis approach are presented in Table 7.

Table 7. *Problems about technological and physical infrastructure (n=38)*

Subtheme	*Codes*	*f*
Technological and Physical Infrastructure	Deficiency of physical infrastructure, hardware and equipment	21
	Inadequate adaptation to changing conditions	19
	Inefficient use of existing technology and equipment	13
	No overlap of sectoral needs with existing equipment	11

According to Table 7, in the theme of Technological and Physical Infrastructure (n=38), deficiency of hardware and equipment comes into prominence across many studies. Inefficient use of existing equipment, not establishing technological infrastructure that keeps pace with changing conditions and not meeting the necessity of sectoral equipment with existing equipment are mentioned as serious problems.

The following are some of the views on issues identified under the single subtheme of Technological and Physical Infrastructure:

> *In our education system, not enough technology is used, and the system is extremely inadequate in the use of consumables and computerized education. (M28)*
>
> *Physical structure and equipment seems to be inadequate. (M18)*
>
> *It is a problem that the environments are insufficient in terms of physical infrastructure and computer hardware. (M29)*
>
> *The reason why the expected success in vocational and technical secondary education is not achieved is that the physical infrastructure cannot meet the increasing demand. (M13)*
>
> *One of the most important problems of vocational education is the lack of infrastructure, technological equipment, laboratories and workshops. (R3)*
>
> *Even though there have been recent attempts to modernize the infrastructure of vocational high schools through EU funds and various projects, it has not resulted in continuous and adequate recycling. (R5)*

This theme can be addressed both in terms of hardware deficiencies and ineffective usage of existing equipment. Because of these two situations, it has a continuity within itself, as, regardless of the existing technology and equipment, there is a constant need for renewal and updating when today's technological conditions are taken into account. It can be said that a durable and flexible infrastructure to be realized at this point could provide this dynamism.

Common Problem about Economy and Society

In 37 of the 54 studies, where problems in vocational education were identified, "problems caused by economic and social structure" were mentioned. The subthemes obtained from the primary studies examined by the thematic synthesis approach are presented in Table 8.

Table 8. *Problems about economy and society (f=37)*

Subtheme	*Codes*	*f*
Economic/financial structure	Poor employment analysis	21
	Not enough money left in the budget	9
	Cost of vocational education is high	4
	Preference of low-income family members	3
Social Structure	Negative public opinion	16
	Lack of interest	13
	Poor promotion	5

According to Table 8, these problems are classified in two subthemes. It is emphasized that the economic and financial structure (n=37) and employment analysis is inadequate, that there is insufficient budget allocation, that vocational education is more costly than other education routes, and is the preference of economically low income families. In terms of social structure (n=34) for vocational education, the existence of a negative social sense related to problems experienced by vocational education, the lack of interest due to this situation, and the lack of adequate promotion of vocational education are perceived as common problems.

The following are some of the views highlighting the subtheme of Economic/Financial Structure in relation to problems related to economy and society:

> *Inadequacy of the material resources allocated for vocational education also negatively affects the quality of education. (A1)*
>
> *Insufficient funds are allocated from the state budget for education. (M27)*
>
> *The current situation is inadequate to enable the employability of students. (M29)*
>
> *The results of the research show that children from low socioeconomic and educational backgrounds are studying in vocational schools. (A8)*
>
> *Students who prefer vocational and technical high schools come from socioeconomically disadvantaged groups, and the parents of vocational and technical high school students have a low education level. (R2)*
>
> *There is a weak relationship between education and employment. (M26)*
>
> *The inadequacy of exchequer transfer leads to a lack of technological infrastructure in vocational education institutions, and the inability of individuals to train their education as needed. (M26)*

The following are some of the views that emphasize the subtheme of Social Structure in relation to problems related to economy and society:

> *It has been determined that vocational and technical education is perceived as a low education type in society. (A7)*
>
> *Some students express their unwillingness to attend these schools because of parental pressure. (M17)*
>
> *One problem related to perceptions of vocational education comes from vocational schools seen as schools where students of low socioeconomic level and low academic success attend. (A1)*
>
> *There is not enough public and student interest in vocational and technical education. (M14)*

Students who prefer vocational and technical secondary education institutions not only experience academic failure, but also come from socioeconomically lower than middle class families. (M23)

As can be seen from the observations, employment analysis is not satisfactorily performed and relates to subtheme of other themes such as Orientation, and Educational Management (schools not opened according to the needs of the region), and also with Qualification. These interrelated problems can be interpreted as situations that trigger and generate each other. It is important to develop a common point of view for the situations mentioned. It can be said that various sections of the community and even executives of vocational education have negative perceptions of vocational education. This negative self-perception originated because of existing and unresolved problems and that vocational education does not hold promise for the future. It is thought that the lack of interest in vocational education and these negative situations can be resolved by generating serious suggestions for solutions to existing problems.

Common Problems Related to Educational Management

In 36 out of the 54 studies, problems in vocational education were identified related to "educational management". The single subthemes obtained from the primary studies examined by thematic synthesis approach are presented in Table 9.

Table 9. *Problems related to educational management (n=36)*

Subtheme	*Codes*	*f*
Educational Management	School business community cooperation is not assured	19
	Fields are not determined according to regional need	11
	Not being able to train the labor force in accordance with labor needs	10
	Careless training of internship/business	8
	Lack of in-service education	4
	Revolving funds not adequately working	3
	Vocational high schools moving away from its original aims	1

According to Table 9, problems related to educational management were composed of a single subtheme. It was expressed that school and industry/business cooperation is insufficient, fields in schools are not opened according to regional and sector needs, inability to conduct business and in-service training efficiently, and the revolving fund system does not work adequately. Looking at all these problems from a broader perspective; the departure of vocational high schools away from it is original aims can be read as emphasizing that capital and labor force should dominate the vocational high schools is a source of the existing problems.

The following are some of the views about the Educational Management subtheme:

School-industry cooperation is not being achieved. (M29)

Teachers and managers do not perceive the work on industry-education cooperation is being performed effectively. (A14)

Trainers must also receive in-service training. (M28)

Appointments are not made relative to qualification during school manager recruitment process, and the extra workloads of managers are the most important problems. (A1)

It has been determined that the fields are not suitable for employment. Students are not able to apply what they learned in businesses. The modular education does not provide

> *adequate contribution to education, and sufficient development cannot be achieved within individual learning. (A14)*
>
> *As the national distribution of vocational and technical high schools is unbalanced, existing departments are not suited to regional and sectoral needs. (M14)*

The educational management theme/subtheme is closely related to other themes, primarily with legal problems. In this subtheme, the lack of cooperation between schools and the business world is, on the one hand, an educational management problem, and on the other is a problem related to legal regulations. The problem of fields not opening according to regional or sectoral needs is seen as a problem entirely related to educational management. Since this problem is closely related to the needs of the labor market, it might be expressed as a problem that can be resolved in the shortest time and deliver a significant return.

Common Suggestions for Problems in Vocational Education

Various suggestions on the problems identified in the 54 studies were made, and subsequently examined within the scope of the current study. When the suggestions were collated under a theme during the meta-synthesis, five different subthemes were created, as shown in Table 10.

Table 10. *Common suggestions for problems in vocational education*

Subtheme	*Codes*	*f*
Suggestions for education-training activities	Vocational guidance	21
	Increase of in-service training activities	16
	Increase vocational competence	15
	Emphasizing applications in lessons	11
	Emphasis on internship / skills training	11
	Increasing sociocultural activities	3
Suggestions for curricula	Updating programs	15
	Creating a flexible structure	12
	Consideration of lifelong learning concept	4
Suggestions for non-school-sectoral applications	Provision of school industry cooperation	22
	Ensure coordination with other institutions	9
	Establishing a structure in line with EU standards	5
	Determination of vocational standards on international validity	5
	Studying for a positive social perception	5
	Establishment of schools in industry or near to industry	3
Suggestions based on legal regulations	Studying for employment	27
	Determination of fields according to regional and sectoral needs	16
	Making promotional activities, providing incentives	15
	Making arrangement for higher education entrance system	13
	Increasing the dividend from the budget	13
	Making arrangements for teacher training	11
	Providing opportunity for students' lateral and vertical transfer	7
	Clarification of authorities and responsibilities of graduates	4
	Cancellation of general high school and vocational high school division	2
	Amendment of the Vocational Education law	2
Suggestions based on physical conditions, equipment and technological infrastructure	Utilization of new technologies	13
	Addressing hardware and equipment deficiencies	12
	Proper use of existing equipment	6

In the Suggestions for Education and Training Activities subtheme, vocational guidance (n=21) and dissemination of in-service training for teachers are seen as being at the fore. The following are some of the suggestions in this area:

Vocational high school principals have stated that an effective vocational guidance system should be established in primary education in order to address the poor image of vocational high schools. (M22)

Trainers must also benefit from in-service training. (M28)

Ensuring that the profession analysis are made permanent, so that appropriate courses for jobs with high employment potential can be included in the programs. (A4)

In the Suggestions for Curricula subtheme, identification of programs according to needs (n=15) and creation of a flexible vocational education structure that can keep pace with technological developments (n=12) were at the fore of the suggestions made. The following are some of the suggestions in this area:

Existing training programs can be improved to make the vocational high school, which contributes to the development of students' social benefits and self-confidence, more functional. (A8)

In order to meet the developing technological needs, a more flexible vocational education structure should be established that can keep pace with technological developments. (M25)

Schools should have a more flexible structure in terms of educational programs, training methods and techniques. (A14)

In the Suggestions for Non-school-sectoral Applications subtheme, the provision of school-industry cooperation (n=22) was strongly emphasized. The following are some of the suggestions in this area:

Schools should be made more effective for programs to involve the competences of the business world and raising a qualified labor force. Communication with social partners should be made continuous and effective in order to determine labor force needs. (A14)

The status of vocational education with the public must be significantly improved. (M28)

Vocational and technical education schools should be established in organized industrial zones and industrial sites under construction. (M1)

In the Suggestions Based on Legal Regulations subtheme, it is emphasized to make legal arrangements and studies for employment (n=27), determination of fields in vocational high schools according to regional and sectoral needs and the localization of them (n=16). The following are some of the suggestions in this area:

Primacy must be given to determination of the environmental needs of schools and the opening of fields and branches in accordance with employment. (A14)

Vocational fields should be determined in line with regional and sectoral needs, and studies should be conducted on new vocations emerging with developing technologies. (M25)

The incompatibility between schools and internship practices of vocational high school students should be eliminated, and projects for employment of students should be developed. (A8)

In the Suggestions Based on Physical Conditions, Equipment and Technological Infrastructure subtheme, studies about the utilization of new technologies (n=13) and the elimination of hardware and equipment deficiencies (n=12) were at the fore. The following are some of the suggestions in this area:

> *The lack of equipment adversely affects education and training in vocational high school should be addressed. (A8)*
>
> *It is stated that the technological tools and equipment that exist in schools should be renewed in order to be able to increase the quality of vocational education. (M22)*

The studies examined within the scope of the current research aimed to reveal existing problems as well as to identify solutions put forward to these problems from various suggestions made within the examined studies. These solution suggestions were made in the areas of education and training activities, curricula, non-formal sectoral practices, legal arrangements, and equipment and technological infrastructure. When the suggestions are evaluated as a whole, it can be said that vocational guidance must be made in a qualified manner, that the curriculum must be made flexible and updatable, that cooperation of schools and industry must be assured, that studies must be conducted with regards to employment needs, that schools must be opened according to sectoral and regional needs, and that existing equipment must be updated/replaced according to the latest developing technologies.

When the defined suggestion titles are examined, there is making vocational guidance appropriate, creating a qualified and productive career and individuals who are happy and love their job on the one hand, but on the other hand that could prevent accumulation in universities. Curricula having a flexible structure, adapting to changing conditions and updating can be more effective in achieving the desired goals of the programs. In addition curricula, school-industry cooperation and studies for employment can be handled together as they complement each other. It can be said that the determination of the fields in the schools according to regional and sectoral needs will have a significant effect on the solution of the problems if they are carried out together with these studies. In addition to the suggestions mentioned, serious deficiencies found in the existing equipment show that hardware needs must be addressed. The regulation of technological infrastructure in such a way that these needs can be eliminated and the efficient use of hardware are important for raising individuals who can develop their vocational skills and can meet the necessities of the time.

CONCLUSION, DISCUSSION AND SUGGESTIONS

Within the scope of the findings obtained from the current research, it is seen that vocational education in Turkey is experiencing problems in many aspects. The problems experienced are varied and can be assessed under headings of education and training structure, legal arrangements, technological and physical infrastructure, economic and social structure, and educational management.

In the results of the research it is seen that the most important problem of vocational education related to education and training structure is vocational guidance. It is emphasized that problems in vocational guidance originate from primary education and both the lack of readiness level of vocational education students and directing their interests and abilities without being taking into consideration lead to failure (Akkaya et al., 2013; Altuncı et al., 2009; Binici, & Arı, 2004; Çalışkan-Maya, 2009; Demirtaş, & Küçük, 2008; Demirtaş, & Tutkun, 2017; Eşme, 2007; Hepkul, 2015). In the deficiencies that can be evaluated in the same structure as the curricula, it is stated that the programs do not have a flexible structure and cannot be updated in accordance with changing conditions taking sectoral needs into consideration (Demir, & Şen, 2009; Ekşioğlu, 2013; Gömleksiz, & Erten, 2010; Tamer, & Özcan, 2014; Tarlakazan, 2013). Vocational orientation is important because it usually determines the occupation that students will have throughout their lives. Despite this importance, guidance

is not meticulously carried out and students in the vocational high school are admitted through academic exams (OKS, TEOG, LGS).The interests and abilities of the students are not sufficiently considered. This is the source of the problem of vocational guidance. The basis of the problems related to curricula is not being able to adequately respond to sectoral and regional needs.

Legally; it is emphasized in many studies that the examination system, the structure of the vocational education and the bureaucracy have led to various problems (Altay, & Üstün, 2011; Demirkaya-Aygün, 2015; Gedikoğlu, 2005; Saitoğlu, 2010; Sönmez, 2008; Tamer, & Özcan, 2014; Vuranok, 2017). These are the determinations that reach the same conclusions, even if they are taken from different perspectives. It is emphasized that the higher education entrance system is disadvantageous for vocational high school students, but it is seen that the open admission developed to eliminate this situation causes other problems instead (Kızgın, 2005; Nartgün, & Yüksel, 2009). It is emphasized that the open admission system needs to be removed or rearranged and it is stated that vocational high schools are also negatively affected from this system. Education is in a central structure and it cannot be localized so this case causes other problems and it also prevents developing productive fields in vocational education. Additionally it is said to move vocational education further away from its original aims as a result of excessive variation. Although the opening of different fields and branches may seem important at first glance in terms of various alternatives, the fact that these created areas do not overlap with sectoral and regional needs creates various problems. It cannot provide employment for the graduated individual and also does not meet the demand of the sector. In addition, the fact that the duties and responsibilities of vocational education graduates are not clearly defined legally causes both bureaucratic and functional problems.

It is indicated in the examined research studies that the existence of technological infrastructure problems concerns all educational institutions nationwide. The lack of hardware and equipment or inefficient use of existing equipment and updating and integration into new technologies have not been fully realized, and as a result has significantly reduced the quality of vocational education, the effort to achieve its aims and productivity (Altuncı et al., 2009; Aslantürk, 2014; Tamer, & Özcan, 2014; Uçar, & Özerbaş, 2013). This case causes other problems and significant deficiencies in keeping pace with developing technology that it leads to serious implications in a fast globalizing world with technology developing so rapidly. The hardware deficiencies in vocational education play an important function, from the quality of students to the implementation of the curricula. When an individual in the age of learning is not trained in school in accordance with the necessities of the time, it is difficult to acquire the skills required by the sectoral needs. This situation also negatively affects the economic and social infrastructure of vocational education.

The fact that the economic and social infrastructure of vocational education is not considered to be strong also leads to major problems as mentioned in the examined research studies (Aksoy, 2013; Bolat, 2015; Bülbül, 2014; Çalışkan, 2015; Erden-Özsoy, 2015; Gemici, 2010; Özsoy, 2007; Şahin, & Fındık, 2008; Tosun, 2010). Especially the lack of good quality analysis of employment studies, the lack of adequate budgetary allocation for vocational education and that vocational education is already a costly educational medium, can both lead to a waste of resources and a lack of production for the future. In this case it leads to the societal indifference for the vocational education or even develops a negative point of a view. It is seen as a serious problem about educational management that the cooperation of schools and industry is not assured, the needs of graduates are not taken into account when the departments and fields

are opened in schools, and that graduated individuals are not trained to meet the sectoral needs (Ardahan, 2010; Aydın, 2017; Çalışkan, 2015; Develioğlu, 2008; Erden, & Özsoy, 2015; Özcan, 2014; Şimşek, 2004; Tamer, & Özcan, 2014; Vuranok, 2017). Educational management can be considered as a source of these problems. The existing equipment cannot be used efficiently, the requirements of the programs cannot be fulfilled adequately, and the legal regulations cannot be implemented effectively; which all prevent raising students who have the necessary skills.

Education-training activities, educational programs, non-formal sectoral practices, physical conditions and technological infrastructure and also suggestions that can be realized by legal regulation were included in the examined studies. Suggestions for educational-training activities focus on the following points. Performing vocational guidance carefully and by taking into consideration student interest, desire and ability; intensifying in-service training and increasing the professional competence of students. Suggestions for educational programs converge on making education programs flexible, updating programs according to needs and considering the lifelong learning concept. Suggestions for non-school-sectoral practices focus on the point of coordination between school and industry-employers. Suggestions for physical conditions and technological infrastructure can be stated as the utilization of new technologies and equipment, the elimination of equipment deficiencies and providing for the efficient use of existing equipment. In the suggestions that can be made through legal regulations; speeding up studies regarding employment; opening up of the area and branches by taking into consideration the features and needs of the region and making arrangements to solve problems existing in the examination system are at the foreground.

On the basis of the obtained, the following suggestions can be offered:

- Qualitative studies on student, teacher, graduate and employer opinions could be made in studies about vocational education.
- Experimental studies can be conducted for the activities carried out in vocational training.
- Good examples in the practices developed for vocational education should be examined and arrangements made considering current and subjective conditions.
- While legal arrangements are being made, permanent changes can be made by taking the views of joint owners, as well as analyzing regional and sectoral needs.

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