

UNVEILING THE SIGNIFICANCE OF THE RECENT
**EDUCATIONAL
TRANSFORMATION
IN TÜRKİYE**



Mahmut Özer
H. Eren Suna

TRT WORLD
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EDUCATIONAL TRANSFORMATION IN TÜRKİYE

WRITTEN BY
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- Türkiye’de Eğitimin Geleceği: Eşit, Kapsayıcı ve Kaliteli [The Future of Education in Türkiye: Equal, Inclusive and Qualified] - 2023.
- The Universalization of Education in Türkiye and New Orientations - 2022.
- Türkiye’de Eğitimi Yeniden Düşünmek [The Rethinking of Education in Türkiye] - 2022.
- Türkiye’de Eğitimin Evrenselleşmesi [The Universalization of Education in Türkiye] - 2022.
- Eğitim Üzerine Söyleşiler [Conversations about Education] - 2021.

- Eğitim Politikalarında Sistemik Uyum [The Systematic Coherence in Education Policies] - 2021.
- Türkiye'de Yükseköğretimde Büyüme ve Dönüşüm [The Growth and Transformation in the Turkish Higher Education] 2021.
- Türkiye'nin Mesleki Eğitim İle İmtihanı - Mesleki Eğitimde Paradigma Değişimi [The Challenge of Türkiye: The Paradigm Shift in Vocational Education and Training] - 2020.

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Foreword

Presently, we find ourselves in a time marked by distinct features that warrant special consideration. In this era, obtaining fundamental necessities has become more convenient than at any point in history. The swift advancement of technology has made numerous resources readily accessible to societies. Moreover, global transformation is notably influencing our outlooks and behaviors. Technology has not only altered our daily routines, including communication, social interaction, information sharing, and consumption but has also digitized them to a significant degree.

As mentioned above, despite the numerous advantages offered by the ongoing transformation, its drawbacks are frequently scrutinized in academic studies and social discussions. Primarily, the transformation has psychological and sociological implications, leading to a rise in social isolation. Indeed, this shift has made individuals more "self-centric," creating a disconnect from social norms and relationships. In this era of growing personalization, people are increasingly reliant on and, in some cases, addicted to digital technologies.

Our era is characterized by a deepening of social inequalities, evident in various indicators reflecting widening income and opportunity gaps among countries and socioeconomic groups. Furthermore, disparities are expanding not only between countries but also within regions of a country. The transformation, while enhancing humanity's access to resources, simultaneously intensifies social inequalities. The increasing prevalence of these inequalities naturally fuels negative dynamics within society.

In addition to the escalating inequalities, societies are grappling with unprecedented global risks rarely encountered in the past. Climate change, global warming, declining biodiversity,

the recent COVID-19 pandemic, and the potential for similar outbreaks constitute some of these challenges. The migration has also surged, presenting a globally discussed phenomenon with significant sociological repercussions. It's crucial to recognize that these global issues not only pose distinct challenges but also give rise to secondary effects that further exacerbate inequalities.

Another crucial aspect is the profound transformation of the labor market driven by technological advancements. The proliferation of automation, machine learning, and artificial intelligence has substantially altered the requirements for human resources and skills in the job market. As machines take on routine tasks that demand low skills, new employment opportunities are arising, emphasizing the need for medium- and high-skill levels. Notably, job mobility is on the rise in the labor market, accompanied by a decline in the inclination towards long-term employment.

We find ourselves in an era of profound transformation, as previously outlined. Can we assert that societies undergoing such change are adequately prepared for its effects? Based on available information and daily observations, a positive answer seems elusive. The same holds for the readiness of our current systems for transformation. Assessing the impacts of this swift transformation across various domains, developing mechanisms to alleviate its adverse effects, and comprehensively monitoring the systems pose considerable challenges. Today, the notion of change is acknowledged as inherent to systems, and studies delve into how systems achieve 'resilience.'

Amidst the ongoing societal transition, education stands out as one of the most substantial and influential systems. Endowed with vast resources, education possesses the potential to reach all segments of society, instilling awareness and essential skills in individuals. However, equipping society with the

necessary skills to adeptly navigate today's transformation is an exceedingly challenging task. This challenge demands that education systems exhibit the capacity to respond to the ongoing transformation through their physical infrastructure, human resources, and policies. Now, the most pressing question arises: "How will education systems, often criticized for lagging behind technological and social advancements, manage the complexities of this profound transformation?"

Numerous global initiatives are underway to address this pivotal question and chart a roadmap. The "Education 2030" program established by the OECD in 2015, the Global Partnership for Education's "GPE 2025: Strategic Plan," and UNESCO's "Futures of Education Initiative" programs stand as significant references on how to navigate this transformation. These frameworks, considering current trends and future projections, offer crucial insights for constructing more inclusive, efficient, and effective education systems that cater to entire societies.

Türkiye has undertaken significant efforts over the last two decades to reform its education system, aligning it with the demands of contemporary education and employment landscapes. However, Türkiye faced diverse challenges in education compared to other countries. Notably, in the early 2000s, only 11% of students were enrolled in early childhood education, 44% in upper-secondary education, and 14% in higher education. The education levels of adults in Türkiye, aged 25 to 64, were considerably lower than those in other OECD countries. In essence, access to education beyond primary levels was severely limited in Türkiye during the early 2000s. Moreover, educational disparities persisted, with significant gaps evident among genders, regions, and socioeconomic groups.

In the Turkish education system during this period, inequalities extend beyond access issues. School tracking and regional

disparities significantly influence student achievement. Türkiye's participation in the TIMSS and PISA cycles, starting in 2000 and 2003, respectively, revealed historically low average scores. Türkiye was also ranked among the countries with the most significant achievement gaps between schools (between-school variance). Despite restricted access to education, the average number of students per teacher and class remains notably higher than OECD averages. Furthermore, there is a limited availability of educational environments and programs catering to students with special needs and gifted students.

Since the early 2000s, Türkiye has implemented significant measures to enhance both the access and quality of education. With a focus on disadvantaged regions, these initiatives primarily aimed to tackle issues related to educational access, resulting in a considerable increase in enrollment rates nationwide. The construction of new schools and classrooms, accompanied by the hiring of additional teachers, has provided essential infrastructure to accommodate new students within the education system. Clearly, the foundation for improvement during this period stems from advancements in both access and the quality of the education system. Concretely, the new infrastructure planning seeks to decrease the average number of students per teacher and class while building the necessary capacity.

Over the past two decades, substantial strides have been made in the Turkish education system, with the last five years witnessing accelerated improvements despite economic and societal challenges. Several key policy areas were identified during this period, encompassing the promotion of early childhood education, enhancement of the vocational education and training system, support for teachers' professional development, activation of lifelong learning activities, and fortification of the education-employment relationship. Notably, this period has

yielded tangible results across all major policy areas, with a particular highlight being the universalization of schooling for five-year-olds.

Türkiye's educational system faced significant challenges in the past five years, exacerbated by the global Covid-19 pandemic. In 2020, the effectiveness of the virus in Türkiye led to the suspension of face-to-face education in schools, mirroring actions taken by many other countries. Subsequently, education transitioned to the Education Information Network (EBA), the Ministry's digital platform, and TRT television channels. While similar measures were implemented globally, school closures in Türkiye extended for a longer duration compared to many other OECD countries. The primary focus for the latter part of 2021 was to resume face-to-face instruction, a goal successfully achieved as all schools in Türkiye have since implemented in-person education.

The earthquakes that struck Türkiye on February 6, 2023, stand among the most significant disasters in the country's history, delivering a severe blow to the education system. Impacting 10 provinces and causing devastation in an area with over 13 million people, the earthquakes had profound effects on social life and education. In response, the Ministry of National Education (MoNE) swiftly mobilized large-scale rescue efforts, and humanitarian aid, and initiated educational activities as soon as possible. Institutions affiliated with MoNE played a crucial role in alleviating the aftermath of the earthquake.

Despite these challenges, the education system in Türkiye has made remarkable progress over the last five years. This book aims to assess the steps taken by MoNE between the second half of 2018 and the first half of 2023 through published academic studies. By revisiting and compiling studies on MoNE's policy areas, the book intends to offer a better understanding of

educational developments and provide a unique perspective on education discussions in Türkiye.

Finally, we would like to express our gratitude to TRT World Research Center for their support during the publication of this book.

Mahmut Özer & H.Eren Suna

EARLY CHILDHOOD EDUCATION CAMPAIGN IN TÜRKİYE*

*Özer, M., Aşkar, P., & Suna, H. E. (2023). Early childhood education campaign in Türkiye. TRT World Research Center.

1. Why Early Childhood Education?

Early childhood education (ECE) is an education level that has an increasingly prominent place on the policy agenda of many education systems. In many education systems, significant projects are carried out for the universalization of ECE and its dissemination to society.

The global effort to make early childhood education (ECE) accessible to all segments of society is driven by the multiple benefits that ECE provides at both the individual and societal level. This section takes a holistic approach to evaluate the contributions of ECE.



1.1. Individual and Societal Impact of Early Childhood Education

ECE is carried out during the period when the child's mental and social development potential is at its highest (OECD, 2007; Tierney & Nelson, 2009). Many years of research showed that the period between the age of birth and age 5 is the most fertile for cognitive and social development (CDC, 2022; Haartsen, Jones & Johnson, 2016). The effective use of the learning capacity of children in this period creates many benefits and opportunities in the long term (OECD, 2020).

The significant potential that children have for learning and skill development during this period is an extremely valuable opportunity in terms of education. Increasing learning opportunities learning potential to the highest level can contribute to the development of children. This inference has been confirmed by many studies to date (Bakken, Brown & Downing, 2017; NRC, 2015).

Research has consistently shown that children who grow up in enriched learning environments during early childhood, which include access to learning materials and opportunities provided by their families, tend to develop stronger metacognitive skills.

The period under 5 years of age, during which early childhood education is typically provided, is a critical period for cognitive, social, and moral development in individuals. This underscores the importance of providing quality ECE during this period to lay a strong foundation for a child's future development and success. During this period, the individual learns skills, attitudes, and values that will contribute to his or her development for many years to come (Johansson, Emilson & Purolia, 2018).

Therefore, besides skills, attitudes and values developed in early childhood also have a significant impact on their future (Murray, 2018; Powell, 2010). As a matter of fact, studies on the long-term effects of ECE reveal significant results in this regard. According to these studies, individuals who receive high-quality early childhood education demonstrate more frequent displays of adult skills, higher levels of social integration and participation, and less negative behavior, including a reduced likelihood of committing crimes (Garcia, Heckman & Ziff, 2019; Hagglund & Samuelsson, 2009).

All these results support that those who receive ECE tend to have higher life satisfaction. The expansion of early childhood education provides these multiple benefits for all children (OECD, 2018). These results indicate that significant improvements can be achieved in the cognitive skills of children whose learning appetite is met with the adequate opportunities.

The contributions of ECE include social and self-care skills beyond cognitive skills (Sezici & Akkaya, 2020; Zhu et al., 2022). Acquiring self-care skills in childhood enables children to take care of themselves at a younger age, thus being more self-confident, and enables them to need the support of their parents less (Petrovic et al., 2019).

In addition to developing self-care skills, early childhood education provides children with the opportunity to socialize and learn how to be a member of a group at an earlier age (Correia-Zanini et al., 2018). Through interactions with their peers and caregivers, children develop social skills, including cooperation, empathy and acting together towards a common goal at an earlier age. The opportunities provided by early childhood education enable children to enter school more prepared and adapt to the school environment more quickly (Horsford, 2012).

1.2. Relationship between Early Childhood Education and Equality in Opportunities in Education

ECE serves to benefit all children by providing multiple benefits. This kind of education allows children to be more prepared for school life. It also allows them to acquire cognitive and social skills at a younger age, leading to greater life satisfaction in the long run (Carr, 2021; OECD, 2018).

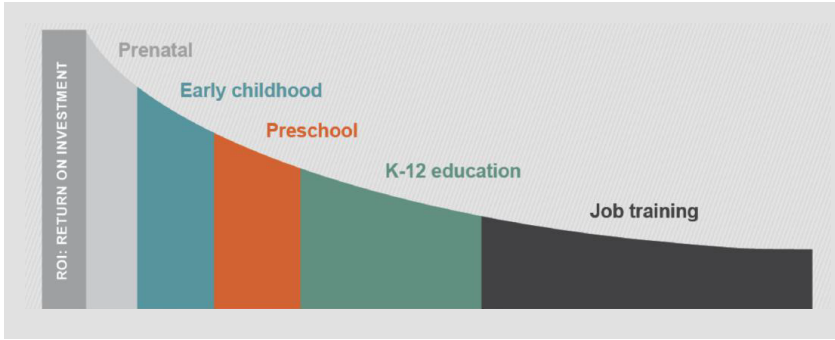
One of the main reasons why ECE is evaluated in terms of equal opportunity is related to the impact of investments in this field. Studies indicate that investments in ECE are the investments that have the most impact on educational outcomes (Heckman, 2008). Due to the multiple benefits of ECE, it is estimated that the return on every \$1 invested in ECE is between \$6 and \$12 (Evans, 2017; Heckman et al., 2010).

Estimation studies have also shown that the benefits of early childhood education are much more cost-effective and efficient than obtaining similar benefits at later education levels. In this context, investments in ECE are considered as the type of investment that countries will provide the highest return on and promote equality of opportunity.

Another significant reason why ECE is associated with equal opportunity in education is its potential to alleviate the out-of-school gaps between students (Magnuson & Duncan, 2016). It is well-known that there are substantial differences in life conditions, family characteristics, and home possessions among different socioeconomic groups. These differences often manifest in students' school life and learning process. In fact, research has confirmed that the most influential factor in students' educational outcomes is their socioeconomic status, which is an indicator of their family and home environment (Suna et al., 2020; von Stumm et al., 2020).

These gaps may also reflect in their educational readiness, cognitive and social skills (Suna et al., 2021). At this point, ECE ensures that all students are prepared for school life before these differences even widen. Therefore, ECE contributes to "starting from the same point" for all children in school (UNICEF, 2019).

Figure 1: Return on Investment by Education Levels



2. Context and Barriers Before the Early Childhood Education Campaign

In Türkiye, ECE has a long history, but its spread began specifically after the 2000s (Özer, Gençoğlu & Suna, 2021). Since the 2000s, the frequency of including targets for ECE in top policy documents has increased (Ayyıldız & Bilici Albayrak, 2020).

There are different reasons for the relatively late prevalence of ECE in Türkiye. The first reason is that self-care skills are primarily acquired by Turkish families and are part of cultural child-rearing practices. Therefore, for many years, families in Türkiye have tried to acquire the skills that are aimed to be acquired in ECE within the family.

The second reason is that female labor force participation rates have only started increasing after the 2000s (TÜİK). The dissemination of ECE plays a very critical role in increasing female labor force participation. As a matter of fact, educational

opportunities that have been expanded reduce the care responsibilities of families and provide an effective opportunity for females who want to work (OECD, 2018; UNESCO, 2002). In this context, the increase in female labor force participation is an influential factor in the spread of ECE after the 2000s.

The third reason is the lack of capacity and the inclusion of ECE in compulsory education. In Türkiye, especially in the last 20 years, investments in education, which have shown a significant increase, are concentrated at compulsory education levels. Lastly, the lack of awareness in society and the cost of education contribute to the late spread of ECE (Atınç & Gustafsson-Wright, 2013; OECD, 2020).

In this context, priority was given to primary and secondary education, and multidimensional support was provided to ensure universalization at these levels. However, early childhood education (ECE) had lower capacity compared to the age population due to the fact that it is not included in compulsory education. Turkish studies have shown that low physical infrastructure and high education costs have long limited the participation of ECE (ERG & AÇEV, 2016; SETA, 2019), especially for disadvantaged families (Beatson et al., 2022).

For this reason, many national non-governmental organizations and international organizations call for raising awareness of ECE and providing multidimensional support.

As stated in the previous section, the expansion of ECE in Türkiye has not reached the desired level for various reasons. The Ministry of National Education (MoNE) has made this level of education its top priority education policy with the "Early Childhood Education Campaign" launched in 2021 (Özer, 2022).

In other words, MoNE has given its highest priority to ECE in order to achieve the goal of "each student receiving at least one

year of early childhood education”, which has been among the most prominent goals in its top policy documents for many years.

In this context, many concrete steps have been taken to strengthen ECE and make it widespread throughout Türkiye. In this section, the steps taken in the last year and a half and the results of these steps will be mentioned.

3. Early Childhood Education Campaign

3.1. Great Increase in Capacity with Newly Established Early Childhood Education Institutions

The first step taken by MoNE within the scope of the campaign was to increase the physical capacity for ECE throughout Türkiye. As mentioned earlier, inadequate physical capacity has been one of the major hindrances to the widespread adoption of ECE in Türkiye.

Firstly, available areas for kindergartens and nursery classes were determined at provincial and institutional levels. Thanks to the steps taken in this section, the number of 2 thousand 782 kindergartens at the beginning of 2022 was increased to 6 thousand 4 in February 2023.

3.2. Opening Village Life Centers and Early Childhood Education

Among the most significant priority by MoNE in 2022 is the reopening of idle village schools and their transformation into “Village Life Centers”. In this context, school buildings that have not been used for years due to migration to cities in Türkiye are being renovated and their infrastructure is improved. These institutions, are being reopened as “Village Life Centers”.

These centers are designed to serve different education stakeholders. These centers are not only schools providing education at different levels of education, but also lifelong learning education centers. The dissemination of these centers has enriched education opportunities, especially in low-population villages.

The dissemination of village life centers throughout Türkiye is important for capacity building in ECE. In regions with low populations, pre-school education is a priority in village life centers, so ECE has been widely spread. The MoNE implemented approximately 2,400 village life centers in just one year. The infrastructure of the remaining village schools continues to be improved. MoNE has started to provide ECE in these centers.

3.3. Opening Primary Schools in Villages and Low Population Areas Regardless of the Number of Students

MoNE supports the steps taken by the government to further popularize ECE by preparing a physical infrastructure. The opening of village life centers has created an effective foundation for the dissemination of education in villages and low-population areas. In addition, legal arrangements should be made to expand ECE in both new and current schools in these regions.

MoNE took an important step in 2022 by removing the regulation that required a minimum number of students to start primary schools in villages and low-population settlements. Prior to the regulation contained in the "Regulation on Opening, Closing and Naming Institutions", a minimum of 10 students were required to open primary schools in these regions. Primary schools were opened regardless of the number of students following enactment. The most critical regulation was critical for increasing capacity and meeting education demands in low-population regions.

Following the arrangement, kindergarten classes and kindergartens for ECE have been opened in primary schools and primary schools, regardless of the number of students in these areas. The opening of new primary schools as a result of the regulation paved the way for the appointment of teachers to these schools. Consequently, as of the beginning of February 2023, approximately 24 thousand children living in 3 thousand 53 villages and low-population areas attended ECE.

3.4. The 10.000 Schools in Primary Education Project

As of 2021, MoNE has directed its school-based improvement approach to primary education. Within the scope of the project, 10,000 schools in need of support were determined according to various criteria such as infrastructure needs, location, student achievement, and absenteeism rates. Multiple forms of support were provided to these schools.

Within the scope of the project, minor and major repairs were carried out in schools. Libraries were established in schools that did not have a library, and the reading resources were improved.

The physical environment of classrooms and schools has been improved, and training has been given to all education stakeholders. Participation in these trainings has exceeded 2.6 million for students, 106 thousand for teachers, and 13 thousand for school administrators.

“The 10,000 Schools in Primary Education Project” made a significant contribution to the dissemination of ECE. Within the scope of the project, the capacity of close to 5,900 kindergarten classes were established. With the resources provided by the project, all of the necessary equipment for the classes was provided.

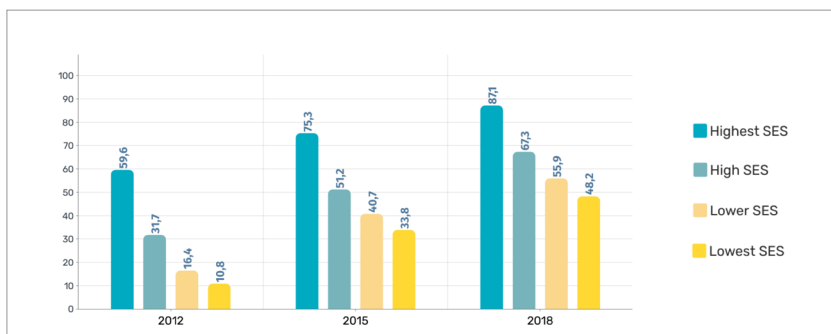
3.5. Financial Support for Participation in Early Childhood Education

One of the global barriers to participation in ECE is the cost of education (Save the Children, 2019). For socioeconomically disadvantaged families, the cost of education can create an additional barrier, which limits their children's participation in ECE.

Studies in Türkiye show a similar result: participation in ECE in Türkiye, as in many other countries, is directly related to socioeconomic status. In other words, children from

socioeconomically advantaged families participate in ECE at a higher rate. Using data from the PISA study, Figure 2 shows the relationship between ECE participation and socioeconomic status (Suna & Özer, 2022).

Figure 2: The Relationship Between Early Childhood Education Participation and Socioeconomic Status in Türkiye (PISA)



This gap in ECE attendance also creates an additional source of inequality. As a matter of fact, the children of socioeconomically advantageous families benefit more from the advantages of ECE – expressed in the previous sections. Although the contributions of ECE are more significant for children of disadvantaged families, the access of these children is more limited (Guerin, 2014; Leseman, 2002).

Universalization of ECE is vital for multiple contribution of ECE to equal opportunities in education. Therefore, many countries, including the OECD and the European Union region, are undertaking large-scale projects in order to universalize early childhood education (Carpenter, Schloesser & Egerton, 2009; Neuman, 2005).

These educations inform the public about the benefits of ECE, expand the number of free ECE centers, and provide financial support.

An effective program has been implemented to ensure that all children can benefit from ECE capacity, which has tripled in just one year in Türkiye.

In the "Supporting Children for Pre-School Education" program, announced by President Recep Tayyip Erdoğan, the program seeks to support disadvantaged students who wish to participate in early childhood education. Within the scope of the project, an annual budget of ₺ 500 million has been allocated. With this budget, the education fees of students who benefit from social assistance are covered if they attend ECE. Approximately 1 million students are expected to benefit from the project.

With this project, MoNE, together with the Ministry of Family and Social Services, not only provides the necessary infrastructure for students' participation in ECE, but also leads the necessary financial support for the participation of all students.

3.6. Container and Prefabricated Nursery Classes

MoNE has developed flexible models to use the physical facilities of schools in the most efficient way in order to expand ECE. Naturally, in order to universalize ECE in Türkiye, which has a target of approximately 1.2 million children for each age group, physical facilities must be employed in the most efficient way. Within the framework, prefabricated and container kindergartens are used by schools that do not have the available space to build a brand-new kindergarten.

Kindergartens in the form of containers and prefabricated structures are established in gardens or other available areas of schools. UNICEF-supported kindergartens are equipped with all necessary materials and provide ECE in schools that are not suitable for the construction of new classrooms.

In 2022, MoNE completed the construction of 300 containers with two classrooms and 150 prefabricated classrooms with two classrooms. With these kindergartens, an educational capacity has been created for more than 15 thousand students.

3.7. Mobile Teacher Class and Transport Center Kindergarten

Another flexible model introduced by MoNE to expand ECE is for regions that are difficult to access. The model used for the participation of students living in these low-population and hard-to-reach areas in ECE is to provide education directly to the students in the their region.

To increase access to education for students in remote regions, a mobile teacher model is utilized. Kindergarten students from nearby villages with low populations can attend kindergarten at a designated village. These models are designed to provide education to students in their own regions.

In the model, an educational design is implemented in which students aged 3, 4 and 5 can receive education together. Mobile training sets are also delivered to students to be used in these models.

3.8. Free School Lunch for All Early Childhood Education Students

Another recent step taken by MoNE to expand ECE is to provide free school meals to students. Access to healthy food, which is among the basic needs of children, is of vital importance in terms of cognitive and social development, and as it is known, regular and healthy nutrition of students in schools, especially in early childhood, is extremely important for their development.

By the end of 2022, MoNE provided free school meals to approximately 1.8 million students per day. With the decision taken in 2023, it was decided to increase the capacity of free school meals throughout Türkiye to over 5 million per day.

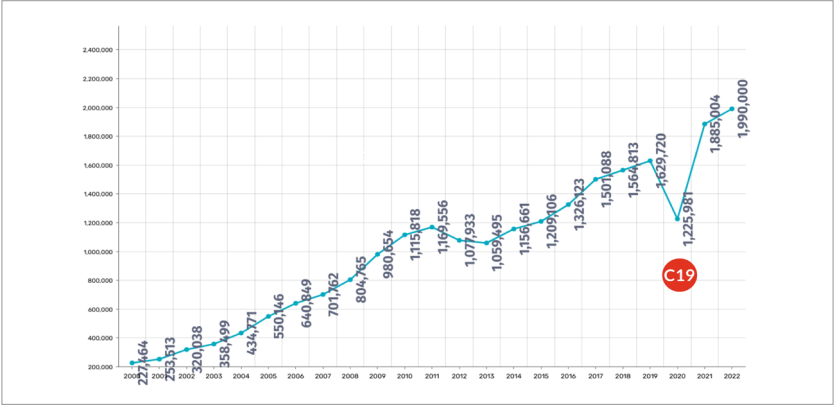
Capacity building is particularly critical for ECE. As part of this improvement, free meals are provided to all students receiving ECE as of February 6, 2023. This step taken by MoNE is significant in terms of disseminating ECE, especially for students from disadvantaged backgrounds.

4. Initial Results of the Campaign

4.1. Number of Students & Teachers

The Early Childhood Education Campaign has resulted in a significant increase in the number of students attending ECE. The number of students had initially dropped to 1.2 million due to the impact of the Covid-19 epidemic, but it has since risen to almost 2 million, as illustrated in Figure 3.

Figure 3: Number of Students in Early Childhood Education by Years (2000-2022)*

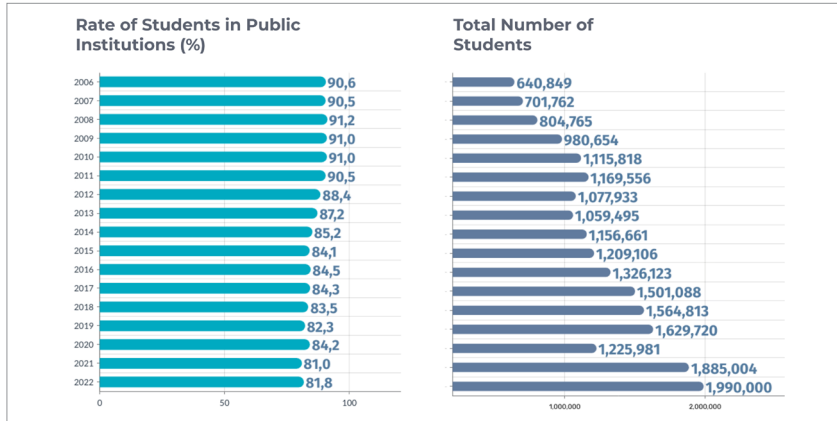


*Data for 2022 (2022-2023) represents live statistics in May 2023.

The main provider of ECE is public institutions in Türkiye. Since 2006, a significant majority (81%-91%) of students receive ECE in public institutions.

In 2022, almost 82% of students receive ECE in public institutions despite a great increase student population as seen in Figure 4.

Figure 4: Share of Students in Public VET Institutions (2006-2022)*

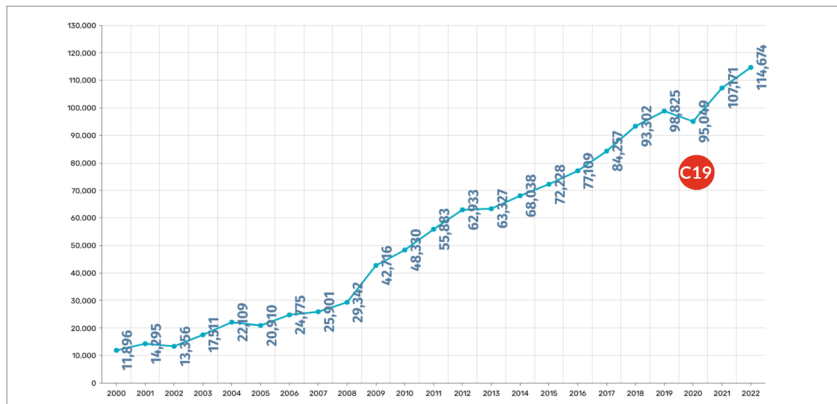


*Data for 2022 (2022-2023) represents live statistics in May 2023.

During the campaign, a significant increase was achieved in the number of teachers in order to increase the quality of ECE. As of 2018, the number of teachers at the level of 93 thousand has increased to over 114 thousand as in Figure 5.

In 2022, out of the 15,000 teacher appointments made, 7,503 were dedicated solely to ECE, demonstrating MoNE's strong commitment to enhancing the quality of ECE services.

Figure 5: Number of Teachers in Early Childhood Education (2000-2022)*

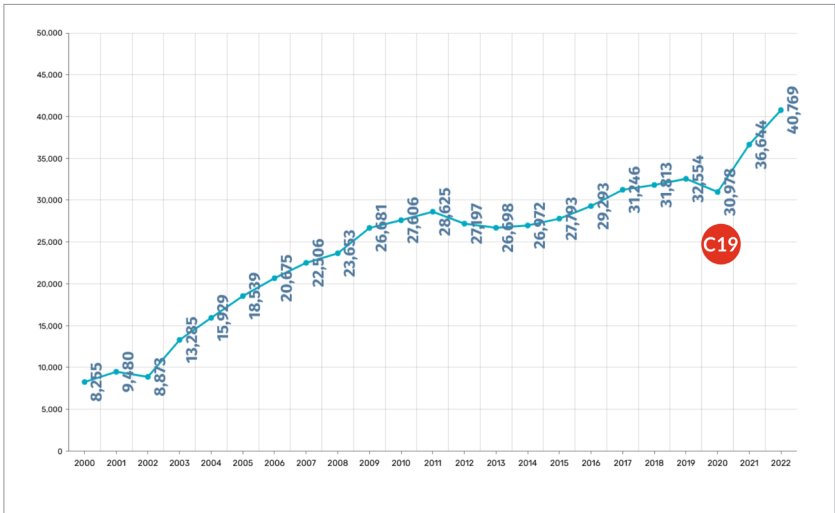


*Data for 2022 (2022-2023) represents live statistics in May 2023.

During the Early Childhood Education Campaign, the number of educational institutions increased greatly in order to popularize ECE.

The number of educational institutions that fell to 30 thousand in the Covid-19 period, which was 31 thousand in 2018, increased to over 36 thousand as seen in Figure 6.

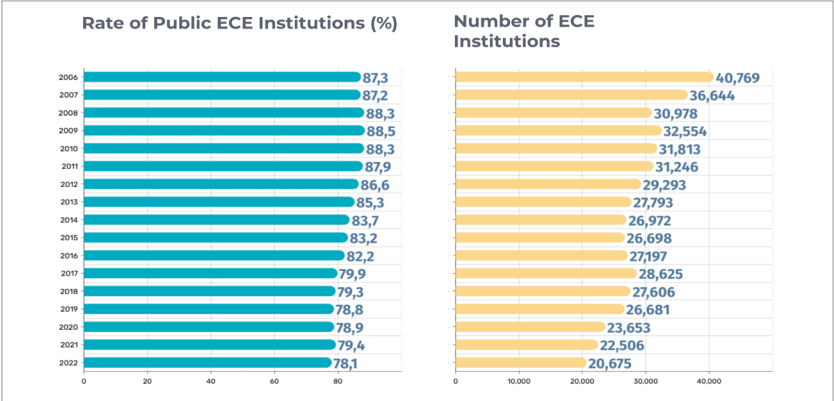
Figure 6: Number of Early Childhood Education Institutions (2000-2022)*



*Data for 2022 (2022-2023) represents live statistics in May 2023.

As previously noted, MoNE plays a major role in providing ECE in Türkiye. Although there has been a significant increase in the number of ECE institutions (nearly 100% since 2006), public institutions still make up almost 78% of all institutions at this level. As a result, the expansion of ECE has been mainly driven by public investments, as shown in Figure 7.

Figure 7: Share of Public ECE Institutions (2006-2022)*

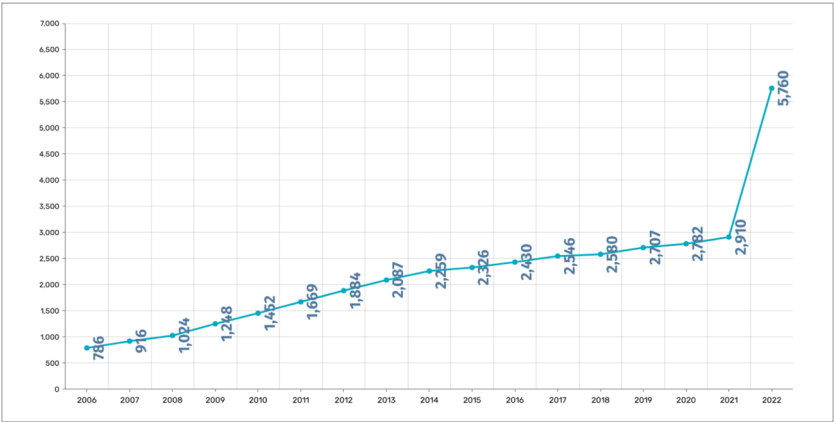


*Data for 2022 (2022-2023) represents live statistics in May 2023.

During the Early Childhood Education Campaign, the number of educational institutions increased greatly in order to popularize ECE.

Independent kindergartens opened in this context are an obvious indicator of this. MoNE has achieved an unprecedented increase by investing heavily in the construction of independent kindergartens. The number, which was 2,900 in 2021, nearly doubled in just one year and reached 5,800 as seen in Figure 8.

Figure 8: Number of Independent Kindergartens (2006-2022)*



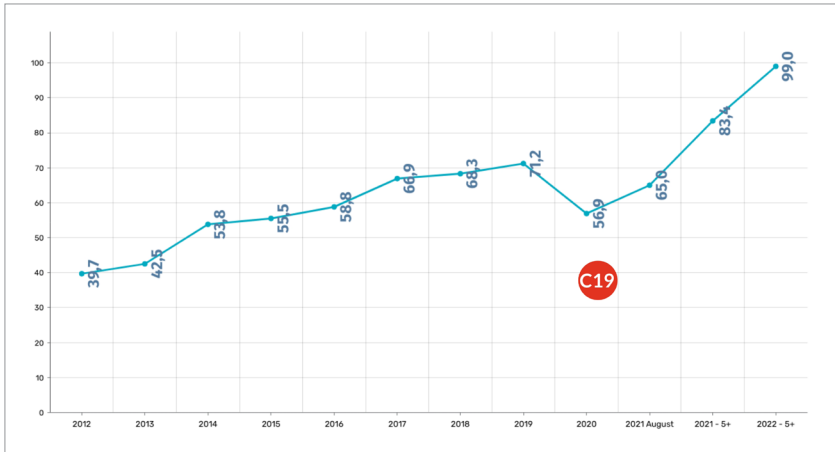
*Data for 2022 (2022-2023) represents live statistics in May 2023.

4.2. Schooling Rates

For this campaign, the age of 5 has been prioritized in order to prepare children for school.

In the kindergartens and kindergartens opened in this context, the records of 5-year-old students were closely monitored by the central organization and provincial-district organizations. Those students who fall within this age group were reached and given access to education. As a result of the steps taken, schooling rates reached 99% from 65% in one year, as seen in Figure 9.

*Figure 9: Schooling Rates in ECE (5 Years) (2012-2022)**

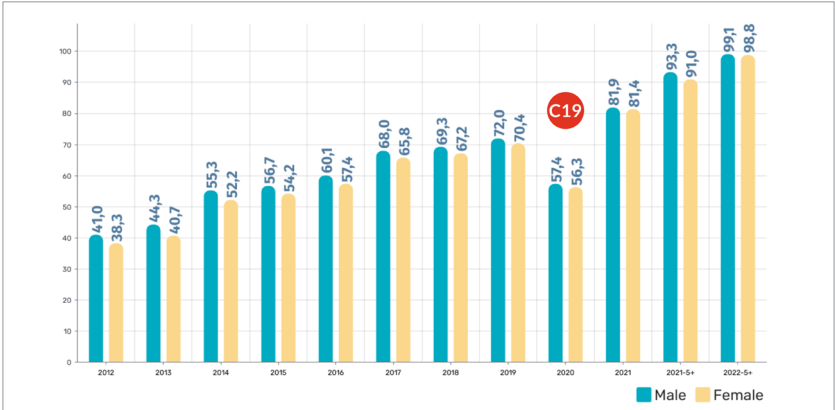


*Data for 2022 (2022-2023) represents live statistics in May 2023.

During the Early Childhood Education Campaign, significant importance was attached to gender balance in the dissemination of early childhood education.

To ensure gender equality in education, monitoring studies were conducted at the provincial, district, and institutional levels. As seen in Figure 10, the schooling rate for both genders has reached nearly 99%, indicating a significant decrease in the gender gap in access to education.

Figure 10: Schooling Rates by Gender (5 Years) (2012-2022)*



*Data for 2022 (2022-2023) represents live statistics in May 2023.

Despite the fact that 5-year olds were prioritized in early childhood schooling, MoNE achieved a significant rise in 3- and 4 year olds, too. The schooling rates for 4-5 year olds increased almost 12% and 7% for 3-5 year old, compared to 2021. It is important to emphasize the improvement in one year. Additionally, the rates in 2022 is almost twofold compared to 2012 as seen in Figure 11.

Figure 11: Schooling Rates in ECE (3-5 and 4-5 Ages) (2012-2022)*

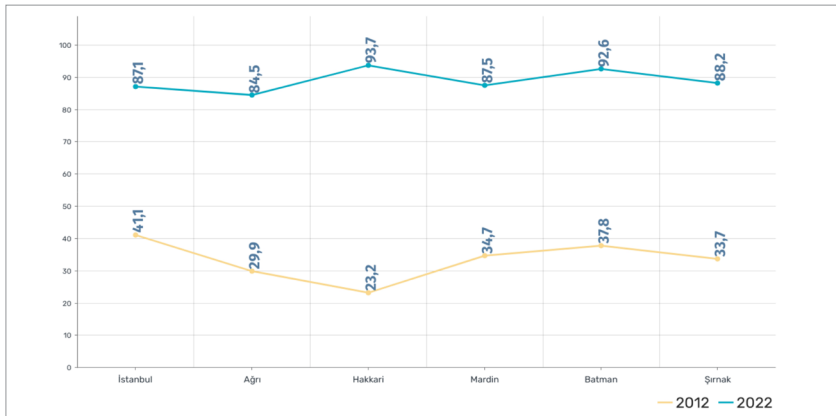


*Data for 2022 (2022-2023) represents live statistics in May 2023.

During the Early Childhood Education Campaign, special attention was given to provinces with low schooling rates in the dissemination of early childhood education.

As seen in Figure 12, schooling rates have increased to 84% and above in six provinces where enrollment rates were at their lowest level (between 23% and 41%) ten years ago.

Figure 12: Change in Schooling in the Last 10 Years in Provinces with Low Schooling*



*Data for 2022 (2022-2023) represents live statistics in May 2023.

5. Overview

As part of the "Early Childhood Education Campaign", which began in 2022 and has been ongoing for approximately one and a half years, Türkiye's long-term goal of "at least one year of qualified ECE for every child" has been achieved.

MoNE's comprehensive approach to the campaign was pivotal in achieving its ambitious goal. It began with significant investments in schooling, which are detailed in the report, resulting in the establishment of new kindergartens and a tripling of ECE capacity within a year. This approach, which considered all dimensions of the issue, was instrumental in the successful implementation of the campaign (Özer, 2021, 2022, 2023).

In addition, with the aim of reaching every student, "Village Life Centers" were put into practice in villages and low-population areas. The establishment of approximately 2,400 village centers in a year has contributed greatly to increasing schooling in these regions. In addition, the "Mobile Teacher Class" and "Transport Center Kindergarten" practices were continued to ensure the participation of students in areas with difficult access to education.

To address the global challenge of limited access to ECE due to education costs, Türkiye initiated the "Supporting Children with Pre-School Education" project. This initiative covers the educational expenses of students who receive social assistance during their ECE and has an annual budget of ₺ 500 million, recognizing that the cost of education is a major barrier to access.

The "free school lunch" program, which is also on the global education agenda and has become even more critical with the effects of the Covid-19 pandemic, has been expanded to include all students in ECE. MoNE significantly increased the number of students receiving free school meals to over 5 million by providing nutritious meals to approximately 1.8 million students daily. This measure ensures that all students participating in ECE at school have access to healthy and balanced meals.

With this multidimensional support, schooling rates have shown a substantial increase throughout Türkiye. The schooling rate for 5-year-olds has reached 99%, and the gender gap has nearly disappeared.

Schooling rates were increased to 85% and above in provinces where there was low schooling ten years ago. The opportunities available for children with special educational needs who wish to receive ECE have also been improved. The number of special education kindergartens which started to be established in the last six years, reached 294 in 2022. These institutions are equipped with up-to-date special education materials. In this context, special education needs in newly established kindergartens and kindergartens were also taken into account.

MoNE's holistic approach to ECE, encompassing physical, economic, and social dimensions, has yielded significant results in a short period of time. As of February 2023, the enrollment rate for 3-year-olds has increased from 9% to 16%, and for 4-year-olds, it has risen from 16% to 38%. MoNE's new goal is to replicate the success achieved in the 5-year-old age group to 3 and 4-year-old age groups. The objective is to reach 50% enrollment at age 3 and 70% enrollment at age 4, which is the OECD average.

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THE NEW DESIGN OF THE VOCATIONAL EDUCATION & TRAINING SYSTEM IN TÜRKİYE: RECENT IMPROVEMENTS & INITIAL OUTCOMES*

*Özer, M., & Suna, H. E. (2023). The new design of vocational education and training (VET) system in Türkiye: Recent improvements & initial outcomes. TRT World Research Center.

The world is undergoing a transformation that is unprecedented in history. There is an ongoing multidimensional transformation of societies that is driven by sociological and technological advancements (United Nations, 2020). As social dynamics continue to change rapidly (United Nations, 2020), technological developments and globalization have exacerbated global competition in many sectors (Dahlman, 2018; OECD, 2018a). As outlined by the United Nations (2020), these changes are being characterized by a rise in inequalities, technological advancements, climate change, urbanization, and international migration. There were numerous socio-economic changes in this period, including the transition from rural to large cities, the transition from agriculture to commerce, the transition from isolated societies and economies to interactive societies and economies, the transition from large families to small families; transitions to higher incomes and higher education societies begin to emerge (Greenfield, 2016).

To adapt to this new paradigm, countries have had to reevaluate a number of subsystems and processes (Gagnon-Lebrun & Agrawala, 2006; Skare & Riberio Soriano, 2021). The social changes discussed above are in fact large-scale and interconnected. It is expected that education will be one of the systems to respond quickly to changes in society due to its ability to reach all stakeholders and as the most effective means for society to adapt to them (Carstensen & Emmenegger, 2023; Facer, 2011). In this context, it is essential to train qualified and current human capital in order to prepare societies for these changes and to contribute to the sustainable development of the country. An education system that provides a qualified education is undoubtedly the most effective tool for training the human resource described above (OECD, 2019a).

According to Facer (2011), education will contribute to the following fields:

- *Enhancing the relationship between people and technology,*
- *Establishing new intergenerational relationships,*
- *Establishing new forms of knowledge and democracy,*
- *Alleviating the inequalities in the economy and society*

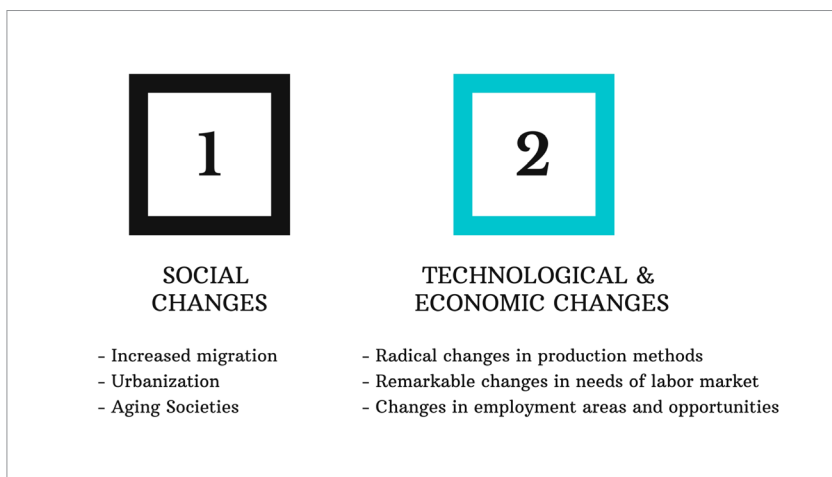
A general consensus has been reached regarding the importance of education systems in countries' adaptation to modern conditions (OECD, 2019a; UNESCO, 2005). Nevertheless, the question of how to configure a dynamic system with many stakeholders and numerous components to meet current needs remains an important subject of discussion. In this context, countries are planning to establish an education system that will prepare both school-age children and adults for this transformation process (OECD, 2018b, 2023; UNESCO, 2005). As an example, the OECD has developed the "Learning Framework 2030" framework, taking into account feedback received from participating countries, which informs countries of the elements required to provide quality education (OECD, 2018b).

As a whole, the educational system plays a significant role in the transformation process, but vocational education and training (VET) stands out in achieving this transformation successfully (CEDEFOP, 2018; Özer, 2020a, 2021b). There are many opportunities for developing countries with VET, including its strong links to the labor market (CEDEFOP, 2017; Özer, 2020c), its role in sustainable development (Pavlova, 2019), and its flexibility and practice-based nature. This report reviews the main elements of the transformation process, the steps taken by countries to prepare their VET systems for this transformation, as well as the transformation and results of the VET system in Türkiye over the last few years.

1. Education Systems: Challenges and Opportunities

Based on the existing literature concerning the challenges encountered by the education systems, as depicted in Figure 1, these challenges can be divided into two categories: social and technological/economic. The prominent social changes include increased migration movements and the aging of societies (OECD, 2013; UNESCO & GEM, 2019). Global migration movements have witnessed an upsurge leading societies to become further heterogeneous, and thus education systems are expected to provide learning opportunities for students from diverse cultures at varying levels of readiness (UNESCO and GEM, 2019; Wiren, 2013). In addition, migration movements are not only prevalent across countries but also within countries, with people moving from rural regions to urban centers (Maarseveen, 2022; OECD, 2014). It is important to note that an increase in migration movements is accompanied by an increase in domestic population movements within a country.

Figure 1: The Challenges Faced by Education Systems in the Process of Transformation



The heterogeneity of society is associated with a diversity of learning needs of individuals receiving education (Juang & Schachner, 2020; Özer, Suna & Numanoglu, 2021). Consequently, teaching a group of students from a variety of backgrounds with varying learning needs poses significant challenges (Juang & Schachner, 2020; Suna et al., 2022). To address these challenges effectively, the education system as a whole must be made more flexible in order to provide education to a student group with an increasing socioeconomic and cultural diversity.

The educational system also bears the crucial responsibility of preparing adults who are particularly vulnerable to these rapid changes (CBI, 2020; CEDEFOP, 2020a). A significant majority of societies are experiencing rapid aging, resulting in an aging workforce (CBI, 2020; OECD, 2019). Consequently, the equivalent of academic and professional skills of adults in the labor market is deteriorating. Thus, enriching lifelong learning opportunities and encouraging adult participation becomes paramount (Eurydice, 2021; OECD, 2019; Özer, 2022a; Özer & Suna, 2022a).

Technological developments and the influence of globalization have caused major transformations in the labor market, signifying a paradigm shift (Gibbs & Bazylik, 2022; Özer & Perc, 2020; Perc, Özer & Hojnik, 2019). Notably, technology has revolutionized the labor market leading to accelerated production and substantial changes in production technologies (Fu, 2022; Valoppi et al., 2021). The widespread adoption of automation as resulted in the displacement of numerous routine jobs, as machines have taken over these tasks (Perc, Özer & Hojnik, 2019). Moreover, artificial intelligence (AI), machine learning (ML), and deep learning (DL) applications have become more widespread in recent years, which have moved machines beyond the status of "routine tools" (Soori, Arezoo & Dastres, 2023).

The impact of this significant change in the labor market has been multidimensional particularly noticeable in the evolving skills needed by the labor market (Acemoğlu & Autor, 2011; EPRS, 2018; Ra et al., 2019). In recent years, the proliferation of automation and machine learning has drastically reshaped the demand for specific skills in the labor market (McKinsey Global Institute, 2018; OECD, 2021a; Pouliakas, 2018). This change, however, has invalidated the claim that the technologies in question will "replace human power and limit the field of employment to a great extent," as often proclaimed (Bessen, 2019). Instead, while these technologies have indeed taken over certain job roles, they have also created new opportunities across various sectors (Bazylik & Gibbs, 2022; Bessen, 2019).

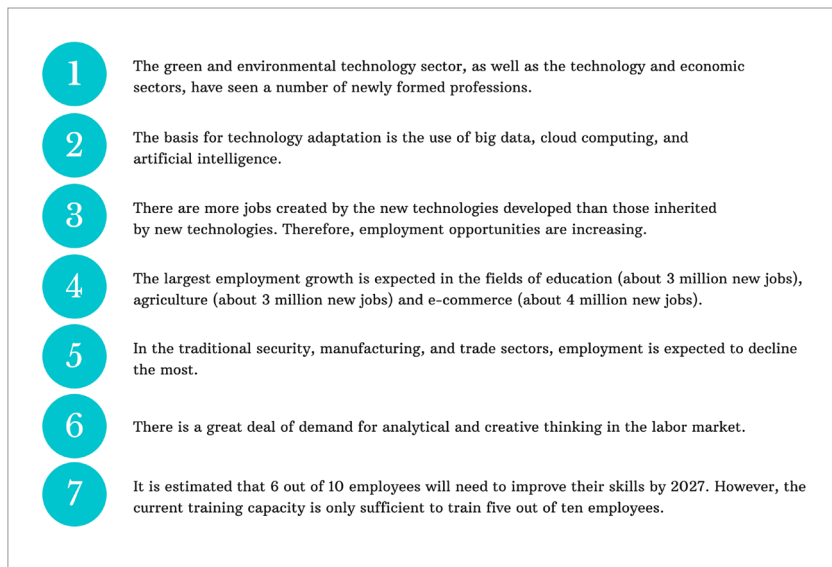
According to the most recent study conducted by McKinsey Global Institute (2017), the labor market transformation has resulted in a net creation of more new jobs than the jobs replaced by machines. This indicates that while certain jobs have been taken over by machines, new job opportunities and occupations have also emerged. The employment opportunities created by this transformation are, however, predominantly concentrated in jobs and professions requiring medium to high levels of skill (World Economic Forum, 2023). To put it more specifically, while employment areas in low-skill and routine jobs are shrinking to a significant extent, there is an expansion in employment areas in complex jobs requiring medium to high skills. It is anticipated that this situation will further polarize the labor market (labor market polarization) as well as wage polarization (wage polarization, income polarization) (Bazylik & Gibbs, 2022; McKinsey Global Institute, 2018).

Hence, solely focusing on employment volume will not present a complete picture of the issue. The changes in the labor market have significantly altered the skills required and the expectations

for education. Figure 2, based on the World Economic Forum's findings (2023), illustrates some of the trends observed in this transformation process.

Maintaining a global perspective on this change is essential. In the current context, VET emerges as one of the most effective tools countries can utilize. Human resources who receive VET play a crucial role in meeting the skill requirements of the labor market (Backes-Gellner & Lehnert, 2021; Özer, 2019, 2020a; Pavlova, 2009). Following the transformation experienced, countries are taking great steps to design VET systems in line with today's conditions and the benefits of the transformation.

Figure 2: Aspects of the Labor Market that are Expected to be Shaped by 2028*



*Based on the World Economic Forum (2023)

2. Global Trends for Revising Vocational Education and Training Systems

In this section, various examples of regulations from different countries are presented, illustrating how they have adapted their VET systems to cope with the changing environment. These examples shed light on the collaborative efforts taken to enhance the quality and inclusiveness of VET within each respective country amid this significant transformation.

2.1. Providing Vocational Education that Supports the Transition to Higher Education and Employment

Because of the transformation that has occurred in the labor market as described in detail in the previous section, highly cooperative and general cognitive skills are required in addition to a capability to utilize new technologies effectively and to learn quickly (CEDEFOP, 2020b; Markowitsch & Hefler, 2019). The primary purpose behind establishing mechanisms to incorporate these skills into VET is to foster a smooth transition to higher education by equipping students with relevant competencies. It was noted by Markowitsch and Hefler (2019) cooperation among European Union countries, particularly since 1995, has led to a shift from solely emphasizing technical skills and employment-focused VET to a more comprehensive approach.

2.1.1. *Incorporating vocational education with general (academic) education*

The convergence of VET and general (academic) education is another important development in this regard as these skills as well as general cognitive skills and digital skills have gained importance in VET (Markowitsch & Hefler, 2019; UNESCO, 2012). In the past, there used to be significant distinctions between general education and VET. However, the transformations that have taken place in the labor market and education systems

have compelled these two types of education to become more integrated. The literature refers to this phenomenon as the "hybridization of general and VET," which is a consequence of the growing emphasis on practical skills in both types of education (Markowitsch & Hefler, 2019). Hybridization of the two types of education also leads to the enrichment of transition opportunities between these types of education (CEDEFOP, 2022). Specifically, the sharp distinctions used in the orientation of students before the 2000s are abandoned, and the focus is instead on the skills that students develop through education rather than the type of education they receive.

2.1.2. Developing mechanisms for the recognition and certification of skills

Globalization of educational opportunities has resulted in a variety of skill development opportunities for both children and adults. There has been an increase in the diversity of secondary and higher education programs, education programs within the scope of lifelong learning, and certificate programs in recent years (Sahlberg, 2007; UNESCO, 2020a; World Bank, 2019a). This diversity has resulted in a more inclusive educational system while necessitating the development of various criteria for evaluating the skills acquired by students (CEDEFOP, 2023a). Various institutions provide these programs at different intervals and with diverse curricula. There is a necessity for a system that evaluates students based on their skill sets rather than the method through which they acquired those skills.

Several countries have developed assessment frameworks and methods to determine the level of skills in their education systems in response to this need. As a result, the validation of formal and informal learning/skills has become an area of cooperation between countries (CEDEFOP, 2023a; Colardy & Bjornavold, 2004). The importance of recognizing individual skills has been

emphasized to such an extent that European Union countries have undertaken six arrangements on recognition methods between 2005 and 2018, as evidenced by examples from various nations (Markowitsch & Hefler, 2019). The recognition of these skills also holds significant implications in identifying the skills that are currently needed or will be needed at the national level (Werquin, 2010).

2.1.3. Promoting lifelong learning

Currently, lifelong learning activities are one of the most prominent aspects of educational systems. Technology is bringing significant social and technological benefits, but it also poses a number of risks, especially for aging societies (Pruchno, 2019). Moreover, this transformation requires a renewal of skills among adults, a growing group within societies (CEDEFOP, 2020c). In the absence of such resiliency, both the ability of this group to adapt to daily life and its employability will deteriorate.

To minimize these risks, it is crucial to promote education as a lifelong endeavor and prioritize lifelong learning activities (CEDEFOP, 2020c; Li, 2022). Essentially, lifelong learning activities are an effective way to extend education beyond the school age, extend it to the entire life span, and promote the development of professional skills. The purpose of lifelong learning activities in this context is to improve social welfare and to make society more capable of transforming (UNESCO, 2021; Waller et al., 2021). In fact, lifelong learning has been incorporated into the Sustainable Development Goals as a goal, with the objective of "providing inclusive and equitable education opportunities for all individuals and strengthening lifelong learning activities" (UN, 2015). Lifelong learning activities are of great importance, leading to the execution of a number of projects designed to improve their effectiveness and inclusiveness (Benavot et al., 2022).

2.1.4. Rise of apprenticeships

As VET underwent a transformation process, apprenticeship training has become an even more important resource for meeting labor market needs (Kuczera, 2017). A vocational apprenticeship is a training program that combines theory with practice to provide students with on-the-job training in a real work environment. (ILO, 2022; Kuczera, 2017; Özer, 2018). Apprenticeship education emphasizes the development of skills in real-life work environments so that it facilitates the transition from school to work and increases the employment rates of apprenticeship graduates on a global scale (OECD & ILO, 2017).

In an age of transformation, competencies such as adaptation, cooperation, and application skills have become more prominent in apprenticeship training's structure (Christensen et al., 2021; Özer & Suna, 2022). Consequently, many countries prioritize apprenticeship education within their VET systems and implement large-scale projects to update these apprenticeship education programs according to current needs (CEDEFOP, 2022b; European Commission, 2012). According to a McKinsey report, apprenticeship training has been identified as one of the most crucial tools for rapidly closing the skills gap that emerged after the Covid-19 outbreak (Christensen et al., 2021). CEDEFOP (2022b) also evaluates apprenticeship training as a method of increasing the effectiveness of vocational training in the post-pandemic period, facilitating rapid changes, and minimizing skill mismatches.

2.1.5. Alleviating skill mismatches

The harmony between the skills of the trained human resources and the skills needed by the labor market is another indication of technological and social transformations (McGuinness, Pouliakas & Redmond, 2019). A "skills mismatch" occurs when the skills possessed by the available human resources do not align with

the skills demanded by the labor market and disparity can have adverse effects on sustainable development (Adalet McGowan & Andrews, 2015; CEDEFOP, 2010; Çidem et al., 2021; Sloane & Mavromaras, 2020) as these conflicts reduce the impact of national and individual investments in education (Somers et al., 2016; Suna et al., 2020a) and make it difficult to plan for human resources effectively.

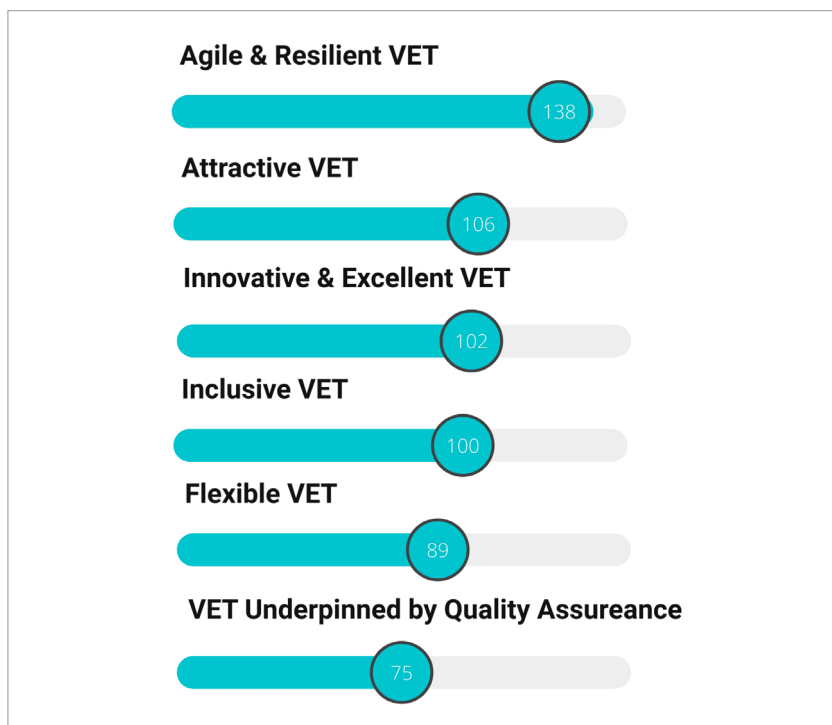
A number of countries have implemented monitoring systems for skills gained and demanded as a result of these negative effects caused by skills mismatches. It is in this context that skill mismatch has become an area of research, and studies have been conducted on the causes and consequences of different types of conflicts, as well as what should be done to prevent them (Adalet McGowan & Andrews, 2015; CEDEFOP, 2010). Numerous studies have explored the factors contributing to skill mismatch and potential strategies to mitigate it. Among these measures, the most notable approach is strengthening the connection between the VET system and the labor market (Özer, 2020, 2020c; World Bank, 2019b). Establishing effective partnerships creates a shared platform of collaboration between different labor market stakeholders and skill development providers. As a result, reducing skills mismatches becomes a primary motivation behind global initiatives aimed at increasing stakeholder involvement in VET financing and management.

3. The Transformation of Vocational Education in the EU

A recent study by CEDEFOP (2023b) also examined the common steps taken in the transformation of VET. As part of this study, the common steps that the EU region countries have taken or intend to take in their VET systems have been evaluated. This section meticulously discusses the steps taken in the EU region as well as the six common policies presented in Figure 3.

Figure 3 summarizes the steps taken by European Union countries to transform the VET system in accordance with the current needs. From the summary, it is evident that the most common

Figure 3: Actions to Transform the Vocational Education Systems in the Countries of the European Union Region (CEDEFOP, 2023b)*



policy area is the development of efficient and resilient VET systems (agile and resilient VET). In the subsequent section, we will explore strategies to enhance the prestige and appeal of VET systems to students, promoting an attractive VET. Additionally, we will delve into methods aimed at positioning this system as a hub of innovation, fostering innovative and excellent VET. Numerous policy changes have been implemented to achieve these objectives, focusing on increasing the inclusiveness of the VET system (inclusive VET), enhancing system flexibility (flexible VET), and establishing a robust quality assurance system for vocational education (VET backed by quality insurance). The subsequent section will offer more comprehensive insights into each of these sub-domains, providing detailed explanations of the measures taken to promote a more inclusive, flexible, and high-quality VET system.

3.1. Agile and Resilient VET

The VET system needs to respond quickly to changes in the labor market due to the close relationship between VET and the labor market (CEDEFOP, 2023b; European Commission, 2022). Moreover, as a result of the system's ability to respond quickly to changes, the human resources that are trained through it are more resilient to the negative effects of change (CEDEFOP, 2023b). In order to enhance the VET system's agility and responsiveness to changes, it is crucial to involve all its components in the decision-making process. To achieve a more resilient and adaptable VET system, 18 EU countries have either revised or are currently revising the criteria used to assess their training programs, curricula, and the overall quality of vocational training. This ongoing effort aims to create a more dynamic and effective VET system that can effectively meet the evolving demands of the labor market and the changing needs of learners. As shown in Figure 4, EU countries have taken steps to ensure their VET systems are more flexible and resilient.

3.2. Attractive VET

An important aspect of the quality and inclusiveness of VET is the development of mechanisms to ensure that this type of education is among the top choices for students (Billett, 2020; Özer, 2020a). Generally, policies that increase the interaction of VET with general (academic) education and strengthen its ties with higher education are used to achieve this goal. Teacher training has been emphasized since teacher characteristics are associated with student outcomes (ETF, 2009; OECD, 2021b; Özer, Suna & Sunar, 2021). Figure 5 depicts countries' efforts to increase digitalization and use modern pedagogical methods and materials to increase students' orientation to VET. In addition to influencing student preferences, increasing the quality of guidance studies is also seen as a policy step that should be taken.

Figure 4: Measures Taken by EU Region Countries to Make Their Vocational Education Systems More Agile and Resilient

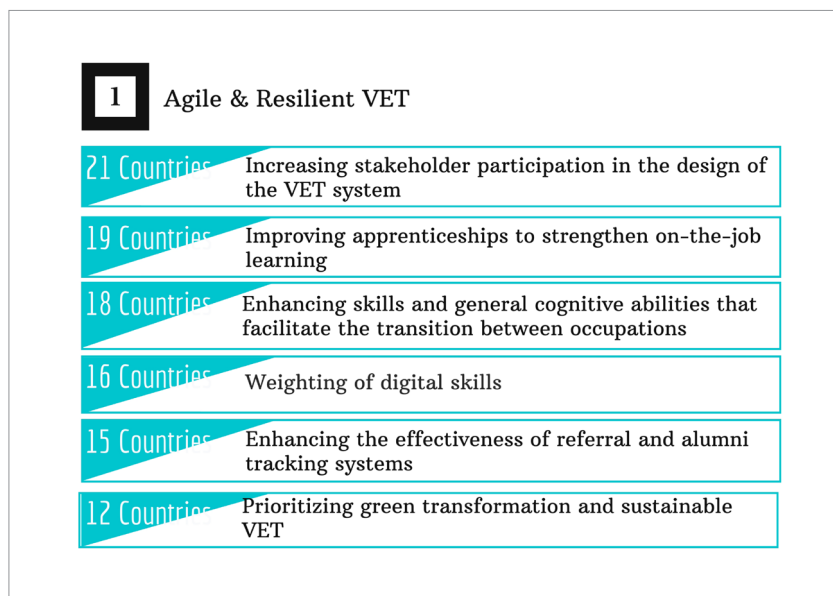
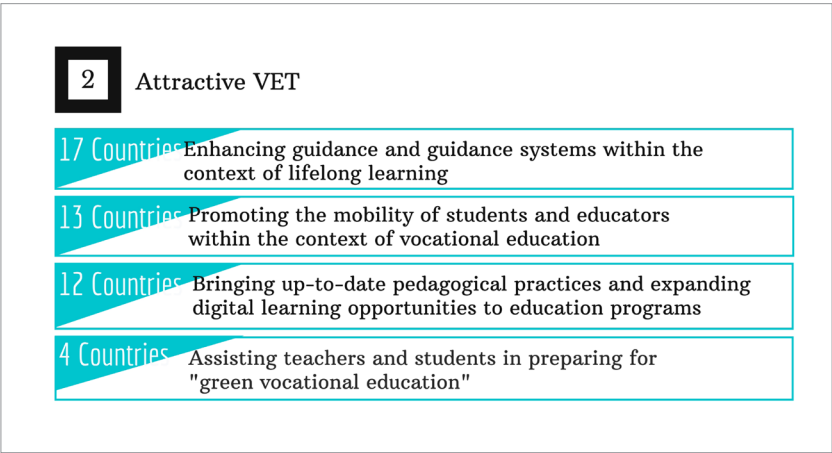


Figure 5: Efforts Taken by EU Countries to Make Vocational Education More Attractive and Responsive



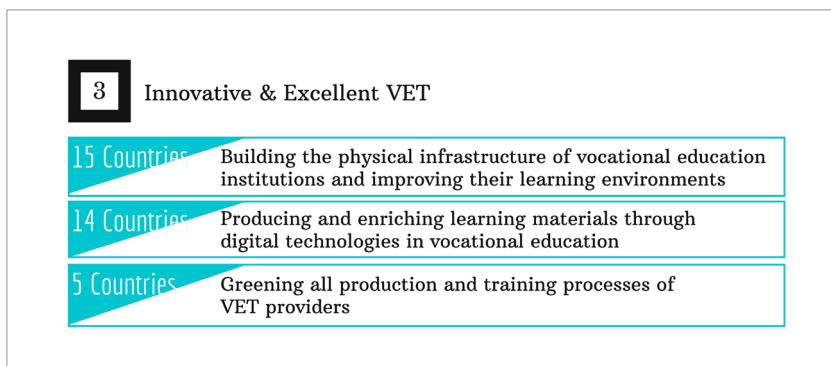
3.3. Innovative & Excellent VET

In positioning VET within the entire education system, it is noteworthy that it plays a leading role in innovative productions and further supports innovation in higher education (Özer & Suna, 2022c; UNESCO, 2020b). The structuring of VET in a way that promotes innovation increases its compliance with the demands of the labor market, which makes VET more attractive to students (Dawe, 2004; UNESCO, 2020b).

The current approach to promoting innovation in VET involves enhancing the quality of education and strengthening relationships with the labor market through "centers of excellence" (ETF, 2021). By providing the necessary infrastructure support and collaborating with the private sector, these centers provide an environment where production, education, and innovative approaches come together (ETF, 2021). The center of excellence stands out in this context as an institution that will act as an example for other educational institutions. It can be seen in

Figure 6 that countries place a high priority on strengthening the infrastructure of VET institutions, enriching their instructional materials, as well as transforming their environment.

Figure 6: Innovations Taken by EU Region Countries to Make Vocational Education Systems Innovative



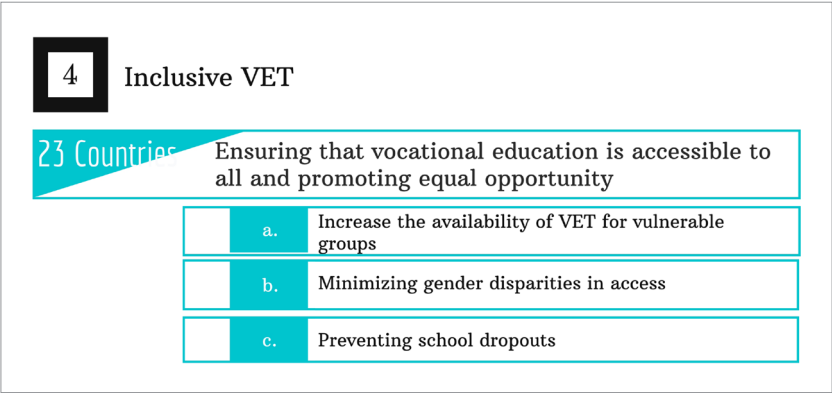
3.4. Inclusive VET

Promoting policies that guarantee the participation of all individuals who wish to participate in VET is a key strategy for improving the effectiveness of VET and strengthening equality of opportunity. Consequently, it becomes imperative to ensure that all segments of society have the opportunity to benefit from VET, and individuals facing various disadvantages are actively encouraged to participate in VET systems to enhance their inclusivity (ILO, 2016). Increasing access to education and reaching out to groups that currently lack educational opportunities are fundamental steps towards achieving greater inclusion (Jeon, 2019).

One of the sustainable development goals is to provide access to qualified VET and higher education to all stakeholders

by 2030 (Council of Europe, 2023). There is a goal under this heading to increase participation rates, graduation rates, and transfers between institutions, particularly for groups with low representation (Council of Europe, 2023). Since these goals contribute to the integration and employability of immigrants, VET is an effective means of facilitating their integration and employment (Jeon, 2019; Özer, Suna & Numanoğlu, 2021). To increase inclusiveness in this context, countries strive to reduce barriers to educational access for all groups. As depicted in Figure 7, policy measures primarily focus on enhancing participation rates and reducing early school leaving, particularly among groups that have limited access to VET.

Figure 7: Steps of EU Region Countries for a More Inclusive Vocational Education System Design



3.5. Flexible VET

Changing social and technological conditions, coupled with today's labor market conditions, require education systems to be flexible in responding to these developments (Nijhof, Heikkinen & Nieuwenhuis, 2003). Upon closer examination of global trends, it is evident that there has been an increase in

transitions between different types of education and educational pathways. Moreover, student mobility has seen a rise, with more students seeking educational opportunities beyond their home countries. (CEDEFOP, 2023b). Furthermore, a variety of training programs are available, evaluations of the skills of individuals are intensified, and different stakeholders are given more responsibility for financing and managing VET (Singh, 2015; Özer, 2020a).

The structure of VET should be flexible to facilitate the possibility of change across all its components. A quality and inclusive nature of in-service training activities is of utmost importance in order to provide VET teachers with the necessary skills to remain relevant (ETF, 2009; OECD, 2021b). The development of teachers' skills is one of the most important policy areas in developing a more flexible VET. Figure 8 illustrates how different education models can be used in conjunction with each other to encourage the recognition of pre-skills and to develop lifelong learning activities.

3.6. VET Underpinned by Quality Assurance

A comprehensive evaluation of the quality of VET is also essential in light of the major transformations in the field, as well as improving the program as a result of these evaluations. A key policy area is evaluating the effectiveness of actions taken with concrete and measurable criteria and ensuring that the evaluation is permanent (ETF, 2015; MEB, 2018a; UNESCO, 2017). To achieve this, countries conduct the necessary studies to reevaluate, revise, and strengthen the criteria they consider to be indicators of quality in VET (MEB, 2018a; UNESCO, 2017).

It has been noted previously that stakeholders have become increasingly involved in the financing and management of VET. Moreover, since VET is a significant area of investment, monitoring and sharing the results of these investments are also key aspects of quality assurance (UNESCO, 2017). Figure 9 illustrates how countries are striving to strengthen their quality assessment systems by using both internal and external evaluation methods.

Figure 8: Increasing the Flexibility of Vocational Education Systems in Countries in the EU Region

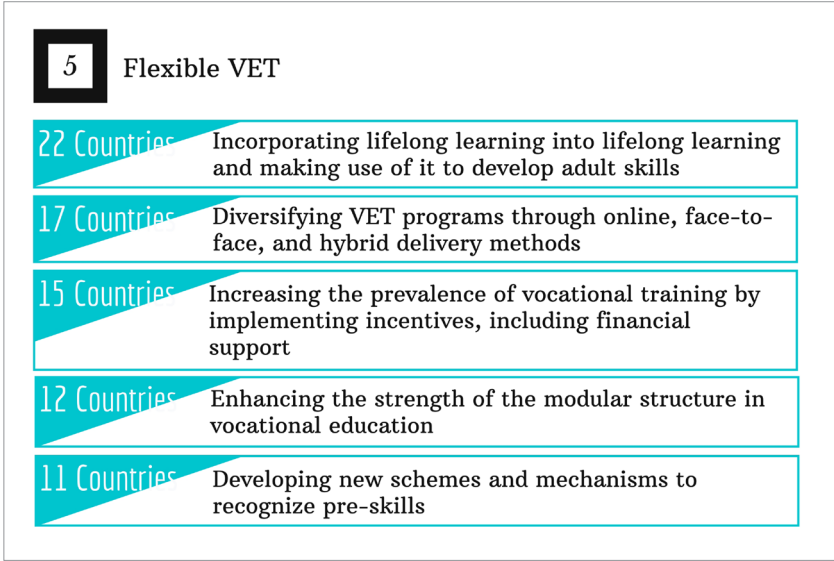
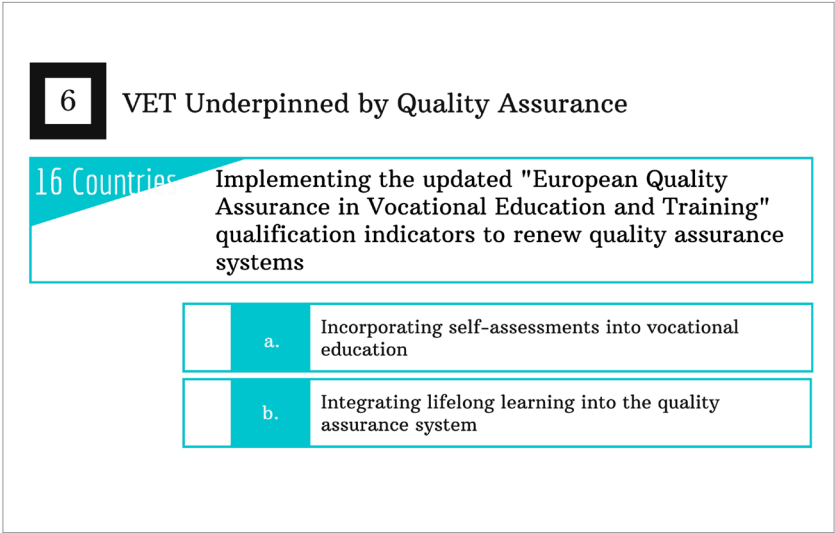


Figure 9: Efforts Made by Countries in the EU Region to Strengthen their Quality Assurance Systems



4. Vocational Education and Training During Pre-Transformation Period in Türkiye

4.1. Origins of Vocational Education and Training in Türkiye

Türkiye has a history and experience in VET dating back to the Ottoman Empire (MEB, 2018b). During the imperial period, vocational training was primarily motivated by military needs. “Mühendishane-i Bahri Hümayun” opened in 1734 and “Mühendishane Berri-i Hümayun” opened in 1796 are two important institutions that provide equipped vocational training and were opened in line with military needs (Semiz & Kuş, 2004). As far back as the Ottoman era, a vocational training approach led by tradesmen's organizations has been used within the context of the "Ahi" tradition, which dates back to the principality period (Ekşiolu & Taşpınar, 2019; MEB, 2018b). Within the Ahi tradition,

students acquired skills that played an important role in meeting the needs of VET at that time. This education approach, however, is carried out within the framework of non-formal education and is therefore far from being systematic. Following the dissolution of the Ahi organization, VET in the Ottoman Empire was carried out using the master-apprentice relationship within a guild organization (Güllülü, 1977; MEB, 2018b). With a master-apprentice relationship approach, VET aims to provide children with professional skills at a young age in a similar manner to the Ahi Organization.

During the Tanzimat Period (1839-1876), this approach and the limitations of the human resources raised through the Guild Organization began to be expressed more frequently (Semiz & Kuş, 2004). During this period, VET institutions have become more systematic in order to support industrial development, particularly in Western countries (MEB, 2018b). There has been a growing trend toward systematic approaches in areas such as curriculum, skill development, and applied training, which are all distinct areas of expertise. A systematic approach to VET was introduced to the Ottoman Empire with the signing of the Ministry of Education Regulation during the Tanzimat Period. Furthermore, the fields of education were expanded during this period by establishing new schools, such as Orman Mektebi, Maâdin Mektebi, and Mektebi Maarif-i Adliye (Ekşiolu & Taşpınar, 2019). As schools were opened during this period, western education approaches began to gain traction and became the basis for VET.

4.2. Vocational Education and Training in the Pre-Transformation Period

The development of VET in Türkiye can be viewed in terms of periods since there are frequent structural changes. Between

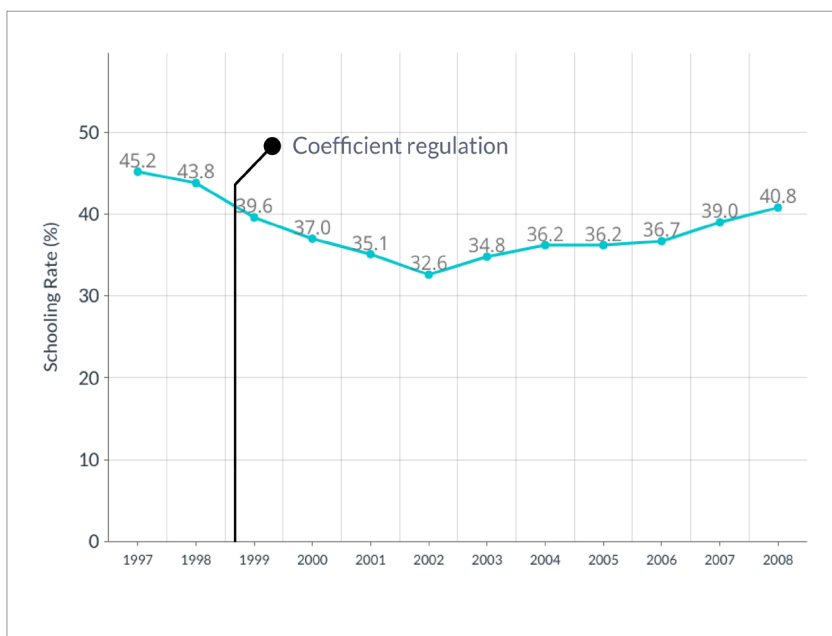
1920 and 1930, efforts were made to establish a more systematic approach to VET in Türkiye and to integrate it into state policies. However, significant advancements in VET did not occur until the 1940s, marking a substantial development period for VET in the country (Demir & Şen, 2009). The Sixth National Education Council convened in 1957 discussed VET and public education extensively. In addition to the opening of an "Apprenticeship School," the council also passed a law on apprenticeships in 1977 (Demir & Şen, 2009).

Upon reviewing the Development Plans and Councils relating to VET from the Sixth National Education Council until the 1990s, statements regarding the VET system and the industry are particularly noteworthy. Additionally, there is a need to increase the prevalence of VET schools, increase the proportion of VET in secondary education, and facilitate the transition from vocational secondary education to higher education. In recent years, these proposals have been presented more frequently, indicating that the relationship between VET and the labor market in Europe has become stronger and that this relationship contributes to sustainable development.

The VET system, which became somewhat widespread until 1999, developed relations with the labor market, and reached a relatively systematic structure, experiencing great negative effects due to external intervention this year (Özer, 2018, 2020a). In conjunction with the "coefficient regulation", when vocational secondary school students sought higher education outside of their field, their achievement level decreased, and this practice, which was practiced for more than ten years, resulted in numerous negative consequences (Özer, 2022b, 2022c). As a result of the implementation of the regulation, the natural flow of students to vocational education has been disrupted. As a result of this practice, the VET preferences of successful students, particularly

those who wish to continue their education at the university level, are restricted (Özer, 2020a). The contrast in VET preference rates before and after the implementation of the coefficient indicates that the coefficient has a negative impact on student flow. According to Figure 10, the share of VET in secondary education was between 44% and 45% before the coefficient regulation began, then it decreased to 37% and then to lower levels (Demir & Şen, 2009). Following the coefficient regulation, student flow in vocational education, which was attempted to be made more attractive through national and international projects, failed to reach the period before the coefficient regulation again.

Figure 10: The Share of Vocational Education in Secondary Education (1997-2008)*



*Demir & Şen (2009)

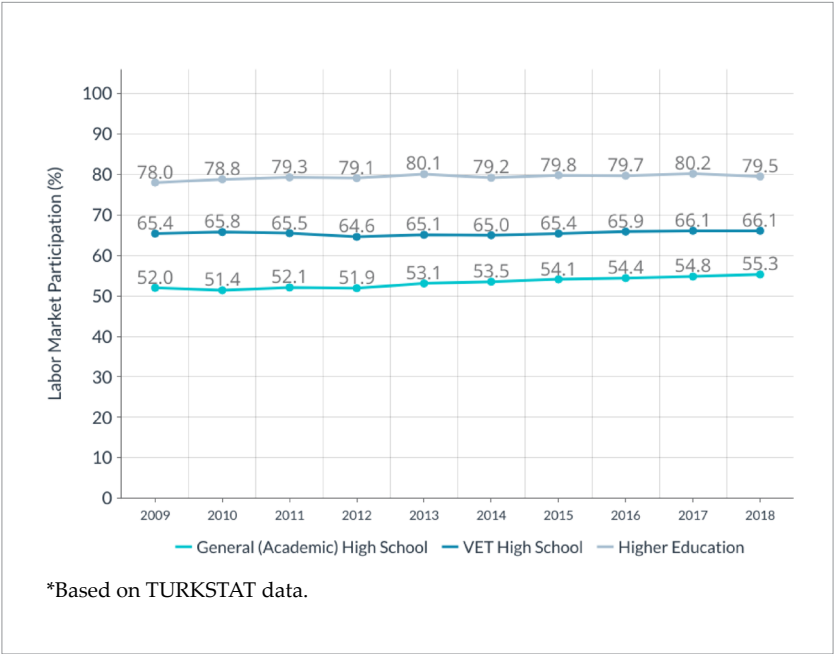
Secondly, the application of the coefficient leads to a transformation in the socioeconomic profile of students. Over time, this implementation has gradually diminished the status of VET, relegating it to a "secondary choice" among students. Consequently, there has been a concentration of students who primarily aim to attend other types of schools but lack the academic performance required for admission, thereby opting for VET as an alternative. During this period, vocational high schools were associated with disciplinary problems, low achievement, and employment difficulties (Özer, 2021). The fact is that studies have shown that VET is the type of education most heavily used by socioeconomically disadvantaged students (Suna & Özer, 2021a; Suna et al., 2020b).

A negative impact of the coefficient regulation is evident not only in the field of education, but also in the labor market (Özer, 2021). It is true that the change in the profile of VET during this period also affected the employability of graduates, and the phrase "I cannot find an employee with adequate skills" began to be expressed more and more by employers. The coefficient application has also reduced the potential to support development through graduates trained through VET.

Despite the abolition of the coefficient regulation in 2010, the long-term implications of this practice were not immediately compensated. Although eight years have passed since the abolition of the coefficient regulation, the rate of preference for VET has not reached the level of 1999 and before, and its social perception has not been sufficiently improved. The transition of VET graduates into the labor market is marked by significant skill mismatches (MEB, 2018b; Özer & Suna, 2020; Suna et al., 2020a). A recent study has shown that the percentage of VET graduates employed in their fields of education is below 10% in many occupational fields (MEB, 2018b).

While VET graduates still have an advantage over general (academic) high school graduates in terms of transition to employment, skill mismatch remains an important issue. There is no doubt that this situation is closely related to the VET system, the labor market, and the personal characteristics and preferences of graduates (Suna et al., 2020a). Nevertheless, the Eleventh Development Plan, published in 2018, aims to improve the quality of VET by 2023. The following conclusions have been made regarding the current state of VET (Ministry of Development, 2018).

Figure 11: Participation Rates in the Labor Market by Educational Level (%)



4.3. Insights From Quality of Vocational Education in the Eleventh Development Plan

- According to the results of the current (2017) survey conducted by İŞKUR, An estimated one in five enterprises have difficulty meeting their human resource requirements,
- According to the TEPAV (2016) study, 46.5% of employers have difficulty finding the human resources they require,
- In a study conducted by TOBB, the umbrella organization for the Turkish labor market, the lack of "sufficient skills/knowledge of graduates" was cited as the main reason for not being able to reach the desired human resources.
- The labor market has difficulties finding the skills it needs, and the reasons for the skill mismatch include the inability to clearly define the skills that are sought,
- Since the coefficient application was abolished, projects such as SVET and IKMEP have made significant contributions to increasing the share of VET in secondary education.
- International large-scale assessments indicate that students who choose vocational secondary education perform relatively poorly,
- It appears that the results of international large-scale studies indicate that adult skills in Türkiye are significantly below the OECD average and that participation is low.
- As one of the youngest countries in Europe, Türkiye ranks among the countries with the highest youth unemployment rates.

- Türkiye ranks first among European countries in the percentage of young people who are neither in education nor employment (NEET). It is evident from this situation that there are a number of serious limitations both in terms of employment and transition to education.
- There is a skill mismatch among VET graduates due to the physical and psychological problems caused by working in the field in which they were educated.
- The TEPAV (2016) report indicates that VET students believe their education is not adequately preparing them for the conditions of the labor market.
- However, the societal perception of VET is still not adequately improved and it is classified as a part of the general (academic) education system,
- A lack of vocational maps based on skill maps contributes to VET's inability to respond rapidly to change,
- A lack of infrastructure in VET institutions can limit the development of students' skills,
- A career guidance/career guidance system has not been developed to support the career choices of students.

5. A Paradigm Change in Vocational Secondary Education: Recent Improvements

As of 2018, the concrete and multidimensional steps taken in the vocational secondary education system have resulted in a paradigm shift (Özer, 2020a, 2020b). Following the previous section, there were significant differences in the approach to VET throughout the Republican era. This period was distinguished by monitoring global developments in the plans made, setting

quantitative targets, simultaneously executing legal planning and implementation, informing society about the steps taken, and monitoring the results of improvements based on the collected data. We discuss in this section the steps that led to a paradigm shift in VET since 2018 and then the results of those steps.

5.1. Developing Stronger Relationships with the Labor Market in All Vocational Areas

One of the most critical current steps concerning VET is the swift and effective response of the VET system to the demands of the labor market. To achieve the desired agility, it is imperative to reinforce the VET system's connection with the labor market and actively involve sector representatives in all aspects of the VET system. This is evident in the inclusion of more stakeholders in current approaches to VET, the expansion of partnerships with the business world in areas such as infrastructure, design, and employment, as well as the increased participation of the labor market in decision-making processes.

As of 2018, the Ministry of National Education (MoNE) took an important decision to strengthen its partnership with the labor market and to establish new collaborations in all the professions where training is offered. In establishing new or deepening cooperation with the labor market, MoNE has adopted five principles as a guideline.

The principles of strengthening relations with the labor market

- Physical infrastructure improvements
- Curriculum and training program co-updates and evaluations
- Involvement of representatives from the business world in teacher training

- Implement internships and on-the-job training in real business environments for students
- A guarantee/priority of employment for successful graduates

By incorporating these principles into the establishment and development of cooperation, the labor market has assumed a prominent role in all aspects of VET. This situation has the additional benefit of making the labor market a key player in resolving the problem of "I cannot find the employee I am looking for," which has become rhetoric by the labor market. Therefore, this approach has resulted in the labor market shifting from one that constantly voices concerns to one that takes an active role in resolving them.

Through this approach, cooperation has been established with labor market representatives in all occupational fields where training is provided. The cooperation has also resulted in several secondary benefits. One of these benefits is the reorganization of all professions and branches in accordance with the demands of the labor market. Along with the views of the labor market, global trainings were also taken into consideration during this reorganization process. This has led to a wide field and branch definition, which encourages horizontal and vertical transitions between professions on a global scale (Canbal et al., 2020). With this definition, the field and branches of the profession have been simplified and the equivalents of the fields and branches have been redefined in the labor market.

Results

An improvement policy was adopted throughout Türkiye following the steps taken by MoNE to strengthen its cooperation with the labor market. The following are some examples of collaborations with umbrella organizations and large-scale representatives of the Turkish labor market as a result of this policy.

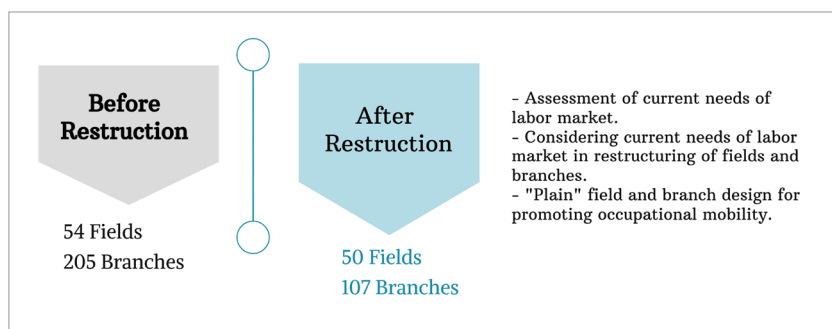
- *81 Vocational High School Protocols with the Union of Chambers and Commodity Exchanges of Türkiye (TOBB):* MoNE and TOBB have developed a joint management model to be used in at least one vocational high school in every province. The physical infrastructure of the schools involved in the project was improved, the curriculum and training programs were updated together, on-the-job training was carried out in institutions affiliated with TOBB, scholarships were awarded to successful students, and TOBB experts were used in teacher training.
- *Cooperation with the Union of Chambers and Commodity Exchanges of Türkiye (TOBB) in the Field of Vocational Training Centers:* In addition to the previous protocol between TOBB and MoNE, a second step has been taken to strengthen vocational training centers where apprenticeships are conducted. In this context, relations are established with VET centers and members of the chambers and commodity exchanges affiliated with TOBB, member institutions are provided to strengthen the infrastructure of vocational education centers, and employment of graduates from vocational education centers is prioritized.
- *Information Technologies Collaboration Project between Istanbul Chamber of Industry (ISO) and Casper at Vocational Education Centers:* A six-month employment-oriented training program

has been developed for MoNE, ISO and Casper in order to meet the requirements for human resources in the field of information technologies. The production and maintenance processes of mobile phones, computers, and tablets, which are increasingly used, are carried out through vocational training.

- *Ankara Chamber of Industry (ASO) Cooperation Protocol for Vocational Education Development:* As a result of the cooperation between MoNE and ASO, many steps have been taken together to improve VET: providing teacher training with the support of ASO, providing students with on-the-job training in ASO institutions, strengthening school infrastructure, and assisting successful students with granting scholarships.

The steps taken also resulted in the updating of the fields and branches of the profession. The equivalents of existing fields and branches have been re-evaluated in Figure 12, and as a result, a "simplified" definition of field and branch has been adopted, which will facilitate the transition between occupations. A transition was made from a 'very specific field/occupation definition' to a 'general and broad field definition, similar to global trends' with this regulation.

Figure 12: Redesign of Professional Fields and Branches



5.2. Designing a System that is Responsive to the Demands of the Labor Market

5.2.1. Updates to curriculum and training programs

The updating of the curriculum and training programs is another important element of the paradigm shift in the vocational secondary education system. There is no doubt that curriculum and training programs play a significant role in the learning process (Snilstveit et al., 2016). Consequently, the VET system needs to provide students with up-to-date skills that are in demand in the labor market by updating the curriculum and training programs. A need for updating the VET curriculum and training programs in Türkiye has also been identified in the 11th Development Plan of the Presidency.

As part of this initiative, work has been accelerated to update the curriculum and training programs in VET, and all occupational fields will be updated in 2020. The update study increased the weight given to general cognitive skills and digital skills as well as applied skills (Canbal et al., 2020). The transition opportunities between sub-programs of vocational secondary education have been enhanced. A more flexible vocational secondary education

program was created within the framework of this revision by supporting the academic skills of students who wish to pursue higher education.

5.2.2. Taking vocational courses in the first year of secondary school

MoNE has taken a significant step by initiating students immediately after their transition into vocational secondary education, thereby facilitating a seamless and timely integration into the VET system. Until 2019, vocational courses were taught in the 10th grade, rather than the 9th grade, which is the first year of secondary education in Türkiye (Özer, 2018). As a consequence of this situation, vocational secondary school students recognized VET with a delay and was cited as one of the reasons for negative outcomes including absenteeism and school dropout. As a matter of fact, by making the necessary arrangements as a result of the feedback received from the stakeholders involved in VET, students could start their vocational courses in the same year by choosing their occupational fields in the ninth grade.

5.2.3. Increasing the number of practical training hours

A further measure taken to enhance students' practical skills in VET is to increase the number of internships and on-the-job training hours. As discussed in the previous section, graduates' practical skills are an important indicator of the quality of VET. From intended to overcome the "limitations in the practice skills of graduates" that have been identified in many strategy documents and technical reports on the quality of VET.

During the last year of secondary education, the on-the-job training period was increased from 24 hours to 39 hours as a result of regulations contained in Vocational Education Law No 3308. Additionally, students were provided with the opportunity to receive 16 hours of on-the-job training per week in their third

year of secondary education. In summary, the amount of time allocated to practical training in the training program has more than doubled (Özer, 2018). As a result of this step, weighting applied skills in training programs and curriculum arrangements was greatly supported.

5.2.4. Providing apprenticeship training in all organized industrial zones

The practice-based nature of VET makes Organized Industrial Zones (OIZs) an important resource for this type of education. OIZs provide students with a number of opportunities to develop their professional skills through the production and service opportunities they provide (Özer, 2020a). A decision was taken by MoNE in 2021 to open a vocational training center where apprentice training is provided to all OIZs in Türkiye. As of January 2022, all 255 industrial centers in Türkiye have been equipped with vocational training centers providing apprenticeship training. In this way, students who underwent apprenticeship training in real business environments received on-the-job training from experts in the OIZs, and relationships with the labor market were strengthened.

5.2.5. Increasing production through production-oriented vocational training

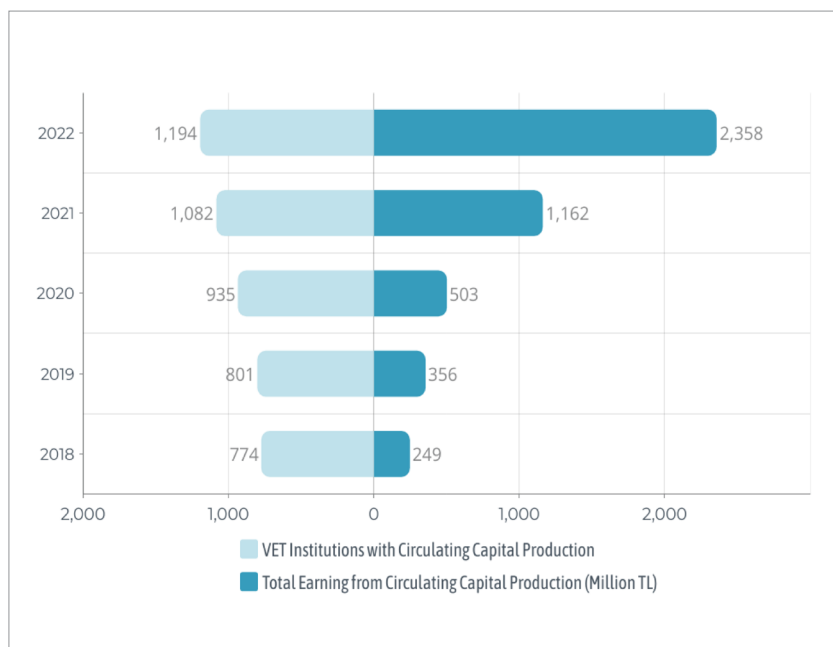
Students' practical skills can be developed through the steps discussed in the previous chapters, however, these steps must be supported by appropriate physical infrastructure. This perspective has led MoNE to adopt a "learning by doing" approach to acquiring skills through VET and to take practical steps to establish the necessary physical infrastructure in schools. As part of these steps, it was intended to start production in schools that do not have revolving funds, as well as increase existing production in other schools to the highest level.

Many material needs of educational institutions in Türkiye have been encouraged to be met with productions within the scope of vocational training to set quantitative targets on intellectual property. Furthermore, the treasury deduction from the revolving fund was reduced from 15% to 1%. By taking this step, all education stakeholders contributing to production have been able to earn more and provide more resources for the improvement of school infrastructure.

Results

Within the scope of VET, the practice-based approach has resulted in a significant increase in revolving fund revenues. Based on Figure 13, production-based revolving fund earnings in VET have increased continuously for the last four years and have reached their peak in 2022. Revenues from the revolving fund, which were ₺ 249 million in 2018, are expected to reach approximately ₺ 2.4 billion by the end of 2022. The number of vocational secondary education institutions that produce revolving funds increased from 774 to 1,194 as a result of the support provided. It is also important to note that the increase in revolving fund revenues represents the increasing capacity of VET to produce goods and services. Further, as illustrated in Figure 13, the revolving fund earnings increased in parallel with the increase in production, leading to significant increases in student and teacher earnings. As opposed to student earnings of ₺ 14.7 million in 2018 and personnel earnings of ₺ 30.8 million in 2018, the said earnings will reach ₺ 110.5 million in 2022 and ₺ 235.9 million in 2023.

Figure 13: Production of Revolving Funds and Sharing of Gains in Vocational Education (2018-2022)



5.3. Enhancements to Apprenticeship Training

In addition to offering flexible and practice-oriented training, apprenticeship training offers excellent opportunities to close the skill gap and respond to rapid changes in VET. The apprenticeship education in Türkiye remained far below the expected level until 2019, and its share of vocational secondary education remained below 10% (Özer and Suna, 2022). As of 2019, MoNE has initiated efforts to make apprenticeships more attractive to students by emphasizing their significance in addressing the country's workforce requirements. This endeavor commenced with the

removal of restrictions on apprenticeship training, enabling a more accessible and inclusive apprenticeship system.

5.3.1. Facilitating the attainment of a high school diploma through apprenticeships

In Türkiye, one of the significant obstacles to participation in apprenticeship training is the lack of direct access to a high school diploma for graduates of the four-year apprenticeship program. Even after successfully completing the apprenticeship program, graduates cannot obtain high school diplomas directly. However, they are entitled to receive high school diplomas through an alternative pathway by enrolling in vocational open-education high schools and completing the different courses determined by MoNE (Özer, 2018, 2019). After completing a four-year program based on application, graduates may enroll in the program in which theoretical courses are taught through open education. As a result, apprenticeship education continues to deteriorate, as it is unable to meet the socially necessary demand.

Since 2019, MoNE has offered the opportunity to take different courses face-to-face at vocational training centers to facilitate the attainment of a high school diploma by students who receive apprenticeship training. Therefore, students are taking the courses necessary to obtain the diploma during the course of their apprenticeship education and face-to-face. These courses can be completed during the education period, thus allowing students to take advantage of the advantages of face-to-face education.

5.3.2. Training qualified trainers through distance education

In light of the fact that apprenticeship education is based on practice and that the training is primarily conducted by master trainers in the workplace, qualified trainers play an important role in apprenticeship education. To ensure the

success of apprenticeship education, it is extremely important to have a sufficient number of qualified trainers in different professions. Even though qualified trainers play a crucial role in apprenticeship training, their heavy workloads prevent them from obtaining a certificate of qualification. In fact, trainers were required to participate in the necessary trainings and submit an application for the certificate. Face-to-face trainings were an important obstacle for trainers whose daily workload was already heavy (Özer, 2018).

By 2020, qualified trainers will be able to participate in trainings via distance education and apply for their documents. Further, qualified trainer exams were provided in an electronic format following the training. Consequently, together with the number of qualified trainers, the number of institutions that offer on-the-job training has also increased, and a significant step has been taken to improve apprenticeship quality and inclusion.

5.3.3. Enhancing apprenticeship training rights and incorporating it into state security measures

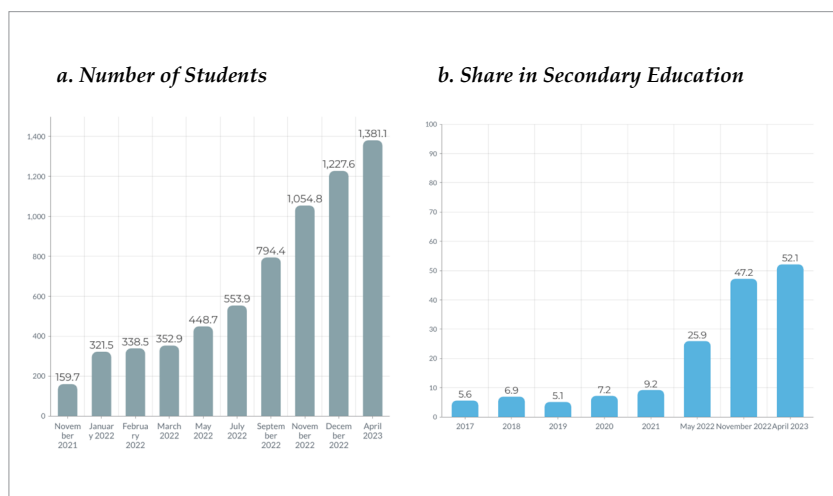
Although apprenticeship education is a practice-based education, students have limited rights and their financial responsibility lies with the institutions where on-the-job training is provided. This is one of the primary obstacles to establishing apprenticeship education as a widespread practice-based education. The Vocational Education Law No. 3308, passed under the leadership of MoNE in 2021, resulted in two important gains (Özer, 2022a, 2022c; Özer & Suna, 2022b). In the first instance, the wages of journeymen who have completed the 11th grade and have advanced to the last year have been raised from one-third to half of the minimum wage. Secondly, the government has begun to cover the wages of students who receive apprenticeship training throughout their education. Consequently, it was ensured that

the improvements in the minimum wage were reflected in the apprenticeship training of students, and that the state had primary responsibility for the protection of individual rights.

Results

Through the change in the number of students participating in apprenticeship training, MoNE was able to evaluate the results of its actions related to improving personal rights, facilitating access to high school diplomas, and disseminating the program. In approximately 1.5 years, the number of students receiving apprenticeship training has increased from 159 thousand to 1 million 400 thousand. Similarly, in Figure 14, the share of apprenticeship training in vocational secondary education increased from 5% to 52%. As a result of the steps taken, the demand for apprenticeship training programs increased significantly and reached a similar level as international examples within the field of VET.

Figure 14: Number of Students Receiving Apprenticeships and Share of Apprenticeships in VET Education



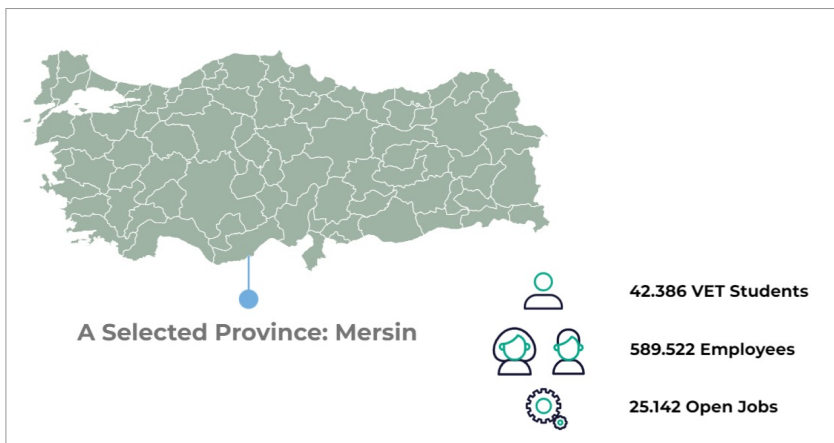
5.4. Alleviating Skill Mismatches

In previous chapters, we have explained in detail how skill mismatch can negatively impact sustainable development. Many studies have indicated that many branches of VET in Türkiye are experiencing a high level of skill mismatch, and that graduates tend to work outside of their field of education (Çidem et al., 2021; ETF, 2022; Suna et al., 2020a; Şahin, 2021). To minimize this conflict, it is crucial to strengthen the relationship between the labor market and the VET system. Additionally, implementing certain structural arrangements within the VET system holds significant importance. The following section outlines the steps that have been undertaken to achieve this objective within the framework of VET.

5.4.1. Developing the Turkish Vocational Education Map

MoNE developed the "Vocational Education and Training Map" in 2020 in order to evaluate the skills mismatch between education and employment at the provincial level. As can be seen in Figure 15, this map visualizes the distribution of students studying in each province by occupation and by employment areas. This map was designed as an open-source tool to explore the correlation between VET offerings in each province and the demand for human resources within the province and neighboring provinces. Accessible through <https://meslekiegitimharitasi.meb.gov.tr/>, the map enables decision-making on the need to introduce new vocational fields in specific provinces and also allows evaluation of the existing fields. Furthermore, the map's development holds the potential to make substantial contributions to addressing the deficiency identified in the 11th Development Plan - mapping the relationship between regional employment areas and vocational training fields.

Figure 15: An Exemplary Province on Türkiye's Vocational Education Map: Mersin



5.4.2. Establishment of “My Profession is My Life” Platform

A key element in minimizing skill mismatch is to ensure that students receive the right information about the field they intend to study and make conscious choices through vocational guidance. However, it is well known that there is a low level of social awareness and a negative perception of vocational education in Turkish society (Özer, 2021a).

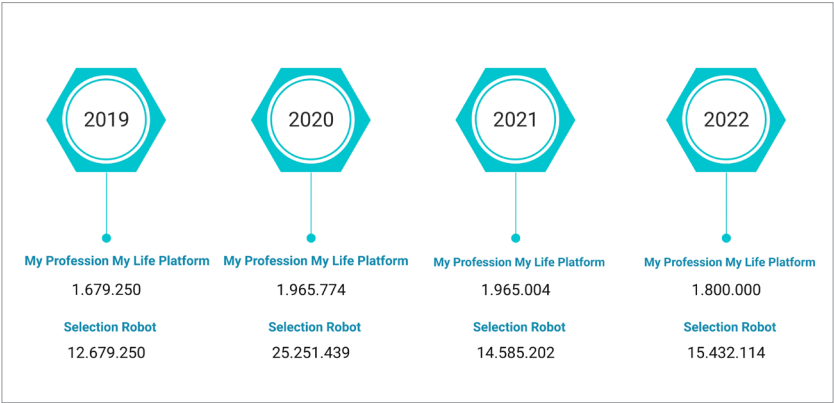
In 2019, MoNE established the "My Profession is My Life" platform to raise public awareness about VET and support the conscious choices made by students. The platform, which can be accessed at <https://meslegimhayatim.meb.gov.tr/>, aims to bring together all stakeholders in VET on a single digital platform and provide them with information regarding current developments in VET. The platform provides information about vocational fields and VET institutions, as well as the Selection Robot to assist in making choices within the Transition to High School System (LGS), career paths in VET, success stories, a variety of forms that students may require, and products produced by VET institutions. Additionally, students and schools are encouraged to share their projects and good practices. Furthermore, the platform is integrated with the İŞKUR infrastructure to provide students with information regarding employment opportunities.

Results

This platform, which was established in 2019 by MoNE and has become a common platform for stakeholders in VET, has attracted great interest from students, teachers, employers and other stakeholders involved in VET as a result of the opportunities that it provides. Figure 16 illustrates the increase in users in preference periods since 2019, and the number of users

has approached 2 million. A selection robot that is accessible through the platform has been used between 12 million and 25 million times. As a result of using the platform effectively, students and parents can learn about VET institutions and the opportunities offered within those institutions, learn about VET institutions where they may be placed upon receiving points, and discover employment opportunities. By the European Training Foundation (ETF, 2020), the My Profession is My Life Platform has been recognized as an exemplary practice in the area of International Trends and Innovation in Career Guidance.

Figure 16: Profession, Life Platform, and Selection Robot Usage



5.5. Enhancing VET’s Preference and Social Reputation

VET encounters numerous challenges, notably a weaker social perception compared to general (academic) education, leading to its preference by socioeconomically disadvantaged groups. A low level of social awareness regarding VET in society, resulting in various segments lacking sufficient information about the

opportunities offered by VET. Consequently, VET tends to be ranked lower on their list of priorities. The concentration of relatively disadvantaged students in VET may also contribute to the increase in achievement gaps between schools, given the important relationship between socioeconomic level and academic achievement. In order to ensure the participation of all segments of society in VET, MoNE has taken important steps to inform them about the increasing opportunities available within this field.

5.5.1. Establishment of prestigious VET institutions

By collaborating with Türkiye's leading labor market representatives, MoNE has taken important steps in establishing prestigious vocational training schools in response to current needs. Currently, ASELSAN Vocational and Technical Anatolian High School and Istanbul Technical University (İTÜ) Vocational and Technical Anatolian High School are in operation. In 2020, Teknopark Istanbul Vocational and Technical Anatolian High School, while in 2021, ASELSAN Konya Vocational and Technical Anatolian High School have opened. In 2022, the YTÜ Vocational and Technical Anatolian High School and Demirören Media Vocational and Technical Anatolian High School has opened as well.

Students derive significant benefits from the laboratories, workshops, and well-equipped physical facilities available at VET institutions, which enable them to receive training in a diverse array of fields. Moreover, the curriculum and training programs are developed in close collaboration with cooperating institutions, ensuring relevance and alignment with industry needs. Additionally, these institutions often offer employment guarantees or prioritize job opportunities for graduates who successfully complete the VET program, providing them with enhanced career prospects and increasing their employability.

Results

Among the most demanded institutions in secondary education are VET institutions, which were established by MoNE in collaboration with strong representatives of the labor market sector since 2019. As shown in Figure 17, these institutions have been the preferred choice of students in the highest achievement segment since 2019. A significant increase has been observed between 2019 and 2022 in the number of VET institutions accepting students with the highest achievement levels. It is evident from this result that vocational high schools have begun to take the place of the science high schools and social science high schools that have been preferred by the most successful students for many years. As a result of this result obtained in a short time, it is evident that institutions preferred by high-achieving students and cooperating with strong representatives of the labor market can influence the perception of VET positively.

Figure 17: Achievement Levels of Students in Vocational and Technical Anatolian High Schools Established in Recent Years

	 ASELSAN VET High School	 İTÜ VET High School	 ASELSAN Konya VET High School	 Teknopark İstanbul VET High School	 Demirören Medya VET High School	 İstanbul Havalimanı VET High School
Field	Electric- Electronic Tech	Information Tech	Electric- Electronic Tech	Information Tech	Radio & Television	Aircraft Maintenance
2019 - Top Percentage	0,46	1,26				
2020 - Top Percentage	0,33	1,47		0,47		
2021 - Top Percentage	0,55	0,71	0,99	0,18		
2022 - Top Percentage	0,44	2,09	1,96	0,40	0,12	1,14

5.5.2. The 1,000 School in Vocational Education and Training Project

To ensure a holistic improvement in VET and to increase its popularity among all segments of society, a school-based improvement policy is required. As part of the "1,000 Schools in Vocational Education and Training" project, which is one of the largest studies in VET history, MoNE adopted a school-based approach to improving VET in 2020. From Türkiye's 81 provinces, 1,000 VET high schools, which are the most disadvantaged according to concrete criteria, were selected for this project and their needs were met through a multidimensional support approach (Özer, 2022). It involves an improvement process that involves all stakeholders in the field of VET and physical infrastructure.

As part of the project, 1,000 schools with the highest level of disadvantage and need for support were determined based on criteria such as physical infrastructure need, absenteeism, low achievement, and dropout rates (Özer, 2021c). Subsequently, the specific physical needs of the selected VET institutions were identified, and comprehensive plans were formulated to address these requirements. Every school has been equipped with new laboratories/workshops as permitted by its physical space, small and medium-sized maintenance and repair work has been carried out, and the digital infrastructure of schools, especially computers, has been upgraded. Workshops and laboratories were upgraded and new materials were purchased. Furthermore, VET institutions without libraries were included in the project "No School Without a Library" and had their libraries installed. All of the schools participating in the project have benefited from the enrichment of their library resources.

The project also prioritizes the academic achievement and well-being of students in these schools. To address learning deficiencies among students in the selected schools, academic

support programs were established and offered free of charge (Özer, 2022d). Additionally, given the prevalence of disciplinary issues, absenteeism, and negative behaviors, such as school dropout, in these schools, psychosocial support programs are being developed to enhance the overall well-being of the students.

A significant component of the project is the enhancement of professional development opportunities for teachers. Teachers in the participating schools were provided with an intensive professional development program. Lastly, the project has actively involved parents, prioritizing their participation in open secondary schools, open education high schools, and open vocational high schools to enhance their involvement in the educational process. Local administrations under MoNE informed parents of the schools included in the project about the opportunities for pursuing higher education. Moreover, the project took into account parents' requests for VET, guiding them towards public education centers in addition to opening vocational high schools. These incentives have resulted in the participation of more than 11 thousand parents in training sessions, highlighting the success of efforts to engage parents in the education of their children and foster a supportive educational environment.

Results

Multiple supports were provided to VET institutions in 81 provinces of Türkiye as part of the "1,000 Schools in Vocational Education and Training" project, which was initiated by MoNE through its school-based improvement approach. In Figure 19, it can be seen that the project has a considerable scope: approximately 24.8% of VET institutions in Türkiye, 37.5% of vocational secondary education students, and 36.4% of teachers in VET institutions benefited from the project (Özer, 2007, 2022d).

Figure 18: Scale of The 1,000 Schools in Vocational Education Project

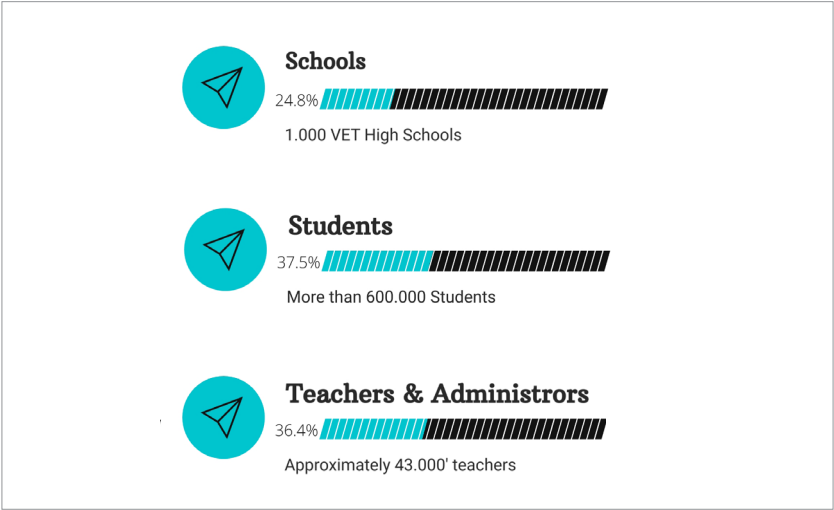


Figure 19 shows how many students have participated in other training and activities within the project's scope, as well as how many teachers and school administrators have participated.

Figure 19: Participation of Students and Teachers in Education and Project Activities

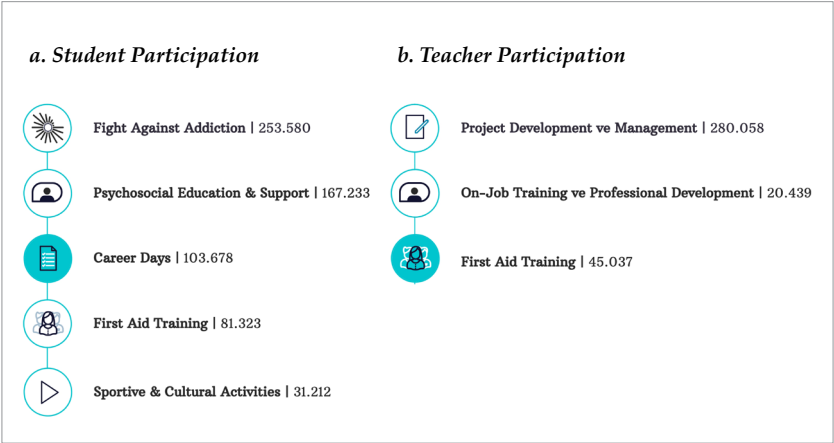
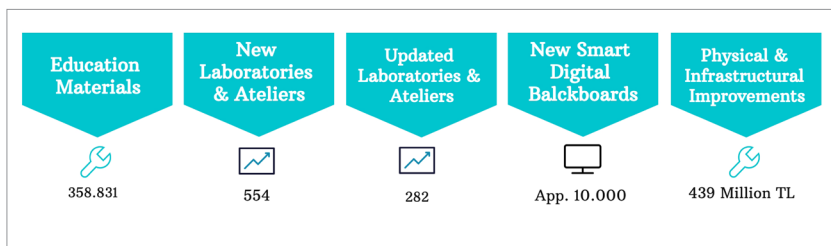


Figure 20 outlines the steps taken to improve school infrastructure in addition to providing support to students, teachers, and school administrators.

Figure 20: Support Provided under the Project for Physical Infrastructure



5.6. Innovating and Internationalizing VET

The preceding sections have extensively highlighted the significant role of VET in fostering innovative productions within its own framework and facilitating the realization of these innovations at the higher education level. As a result, countries employ diverse approaches to emphasize and promote innovative productions while transforming their VET systems. One of these approaches is to establish "centers of excellence" bringing together the labor market, education, and research. This collaboration allows the VET system to incorporate and utilize the most recent scientific approaches and products.

5.6.1. Establishment of R&D centers and centers of excellence

To strengthen the ties between VET and the labor market, promote collaboration between research and education, and offer exceptional educational opportunities for students, MoNE has undertaken the establishment of Research and Development (R&D) centers and centers of excellence in various regions of Türkiye. In recent years, R&D centers have made significant

strides in developing innovative productions within their respective fields. Their enriched infrastructure and production-oriented approaches have enabled them to achieve remarkable progress in generating innovative solutions in a relatively short period. Since May 2023, 55 R&D centers have been established, contributing greatly to the country's needs, especially during the COVID-19 epidemic that we experienced in 2020. The topic of vocational training in connection with the COVID-19 outbreak is discussed in more detail under the title "Contributions of Vocational Education and Training during the COVID-19 Epidemic".

Centers of excellence, on the other hand, serve as institutions where collaborations are developed with leading representatives of the labor market to provide students with the best educational environments. Toward this end, MoNE has prepared and coordinated the necessary infrastructure for the transformation of 15 VET institutions into centers of excellence. This figure illustrates the distribution by province and area of Centers of Excellence and R&D Centers as of June 2023.

5.6.2. Period of intellectual property in VET

Global competition is primarily determined by intellectual property rights (IPR) at the point where the labor market has reached. As a matter of fact, institutions can only protect their innovative productions through intellectual property during this period when copying becomes widespread and similar productions can be manufactured quickly (Moerman & Vander Laan, 2006). By placing the product under the umbrella of intellectual property, legal rights can be claimed over the product and commercial profit can be realized. A major factor in evaluating the level of development of a country in terms of technological and innovative production is intellectual property products.

Figure 21a: Distribution of Vocational Excellence Centers in Türkiye by Province and Area



Figure 21b: Distribution of R&D Centers in Türkiye by Province and Area

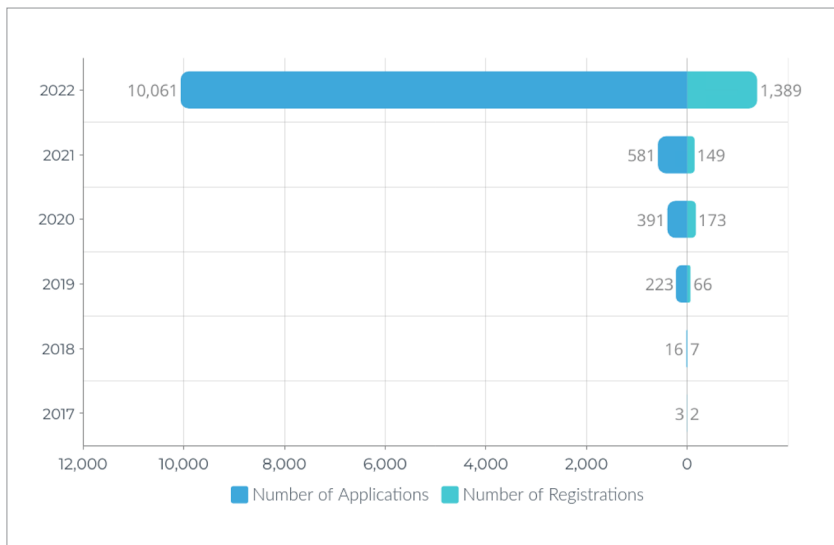


MoNE has introduced a systematic approach to intellectual property production in VET through a study that was initiated in 2023 (Özer & Suna, 2022). The Turkish Patent and Trademark Office has provided intensive training on project development, project management, and intellectual property production process to managers and teachers in VET institutions. Secondly, an "Intellectual Property Office" was established within MoNE, allowing the entire process of intellectual property to be coordinated centrally. MoNE institutions were also exempted from application fees in connection with the cooperation with the Turkish Patent and Trademark Office. In this way, it has become easier for institutions to apply for and register products they have developed without being concerned about financial concerns (Özer & Suna, 2022c).

Results

During the intellectual property period initiated by MoNE, the steps taken with the assistance of the Turkish Patent and Trademark Office produced tangible results within a short time. Based on Figure 22, the number of applications and registrations made by MoNE institutions began to increase in 2021 and reached its highest level in 2022. In fact, the number of applications and registrations below 10 before 2017 approached 1.4 thousand in 2022, while the number of registrations received by VET institutions increased to over 8 thousand from all MoNE institutions (Özer & Suna, 2022c). According to the results of this study, VET institutions can have a significant impact on increasing intellectual production when the necessary support is provided and monitoring is carried out to ensure the quantitative targets are met.

Figure 22: Vocational Education Institutions' IPR Applications and Registrations (2017-2022)



5.6.3. Establishment of international VET institutions

A paradigm shift has occurred in VET as a result of the steps taken to address the COVID-19 epidemic (Özer, 2020a). International Vocational High Schools were established by MoNE in 2022 to allow Turkish students, as well as students from nearby areas, to benefit from this transformation in VET. As a result of collaborating with the labor market in different fields, students have a greater opportunity to find employment both in Türkiye and in their own countries by taking advantage of the benefits of foreign language courses in these institutions. Students from six Balkan countries -Kosovo, North Macedonia, Bosnia and Herzegovina, Serbia, Bulgaria, and Albania- will continue their education in international vocational high schools beginning in 2022. In the near future, MoNE plans to increase the number of international vocational high schools as well as the diversity of students enrolled in these institutions.

5.6.4. Exporting of vocational education institutions

Internationally, VET institutions have been leading innovative productions, especially R&D centers and centers of excellence. A variety of productions have been prioritized by VET institutions during the COVID-19 epidemic, and the product portfolio has been enriched. As a result of the COVID-19 epidemic, the volume of exports initiated by France, Belgium, Netherlands, Bulgaria, Czechia, and the United Kingdom was increased with the addition of Romania, Iraq, Bosnia and Herzegovina, and North Macedonia. Educational experiment sets, disinfectant and hygienic materials, cleaning sets, shawls and scarves, and oven sets for use in education are among the most frequently exported products.

5.6.5. Refugees' social integration through VET

Many countries, particularly those in the OECD, use VET to increase the employability of immigrants and facilitate their social integration (Jeon, 2019). With its practice-based structure, VET allows immigrants to be less affected by the language barrier and cultural differences they often encounter (Özer, Suna & Varımoğlu, 2021). Additionally, immigrant students can recognize their pre-learning within the framework of vocational education. Social and Economic Cohesion Through Vocational and Technical Education - SEUP and Quality Apprenticeship in Türkiye are two programs that were launched in 2020 to assist immigrant students in integrating socially, increasing their employability, and gaining access to education through VET in Türkiye. The "Program for Facilitating the Access of Syrians and Host Communities to Employment - IMEP " through Vocational Training provides vocational training for more than 77,000 refugee students.

5.7. Advancing Lifelong Learning

A lifelong learning program is crucial to increasing the skill development and social adaptation of an aging society. Several studies have demonstrated that participation in lifelong learning activities increases adults' employability and social cohesion by contributing significantly to their skill development (Nilsson & Nyström, 2013). Many countries are undertaking large-scale projects to expand the scope of lifelong learning activities and encourage their participation.

The level of participation in lifelong learning activities in Türkiye, however, is significantly below the average. It is evident from both the PIAAC (OECD, 2013b) study and the evaluation studies conducted by Eurydice (2021) that the participation rate is low. The basic literacy skills of adults in Türkiye, as well as the situation in regard to digital skills, which are becoming increasingly important, are still significantly below the international average. Despite Türkiye's relatively young population, there is a significant gap in terms of social adaptation and employment participation among adults.

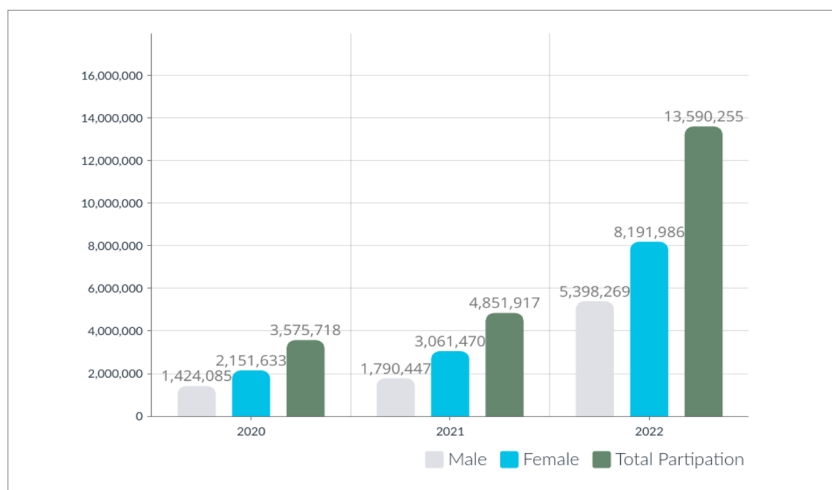
5.7.1. *Enhancing the inclusion of public education courses*

The purpose of this initiative is to encourage participation in 'public education courses,' which has been the main method of education within the scope of lifelong learning for several years. To increase the prevalence of public education courses throughout Türkiye, MoNE has developed an approach to consider the needs of society when determining the fields of education. Moreover, women benefit from public education courses at a higher rate than men, thus these courses contribute significantly to female employment.

Results

As of 2021, MoNE's approach, which increases adult learning inclusion and pays more attention to adult feedback, has produced an answer within a short timeframe. Figure 23 shows that total enrollment in public education courses increased significantly after the decline caused by the COVID-19 outbreak in 2020 and peaked in 2022. The high participation rates of women were maintained despite a large increase compared to previous years. Through its increased capacity and quantitative targets, MoNE exceeded its target of reaching one million citizens per month (MEB, 2022) and ensured the participation of more than 13 million citizens in 2022.

Figure 23: Total Participation in Public Education Courses by Gender (2020-2022)



5.7.2. Establishment of the VTC Skill Development Programs

By creating a new professional skill development program in 2022, MoNE intends to increase participation in lifelong learning activities. According to the program, adults will be able to

reskill & upskill through relatively short training programs (6-8 months) (Özer & Suna, 2022a). The development of this program was guided by the flexible and employment-oriented approach of vocational training programs. Participation in the developed program was open to all adults with a high school diploma or equivalent.

Results

As shown in Figure 24, the short-term and employment-oriented VTC Skill Development Program, launched by MoNE in 2022, drew a large amount of attention in a short time, with participation exceeding 900 thousand in a short period. As shown in Figure 24, this program has clearly demonstrated the need for talent development programs by attracting a great deal of interest from a range of age groups and educational levels. It is also important to note that this program has the highest gender balance in VET. It is evident that the program developed in this context has the potential to significantly close the skills development gap in Türkiye.

Figure 24: Number of Participants in the VTC Skill Development Program (February 2022-April 2023)

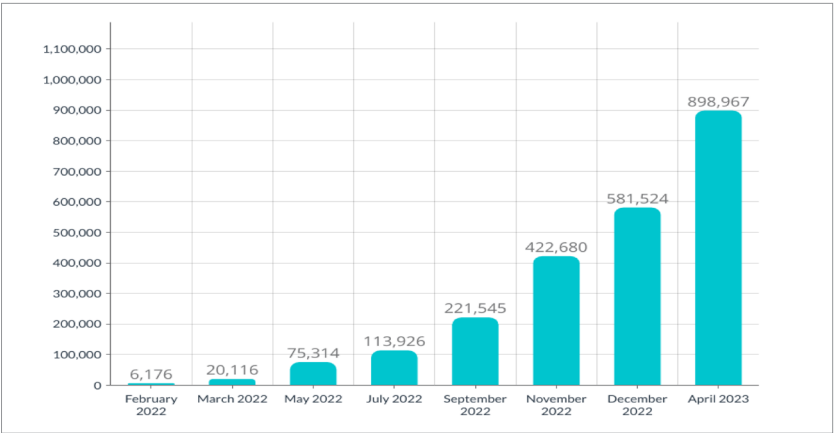
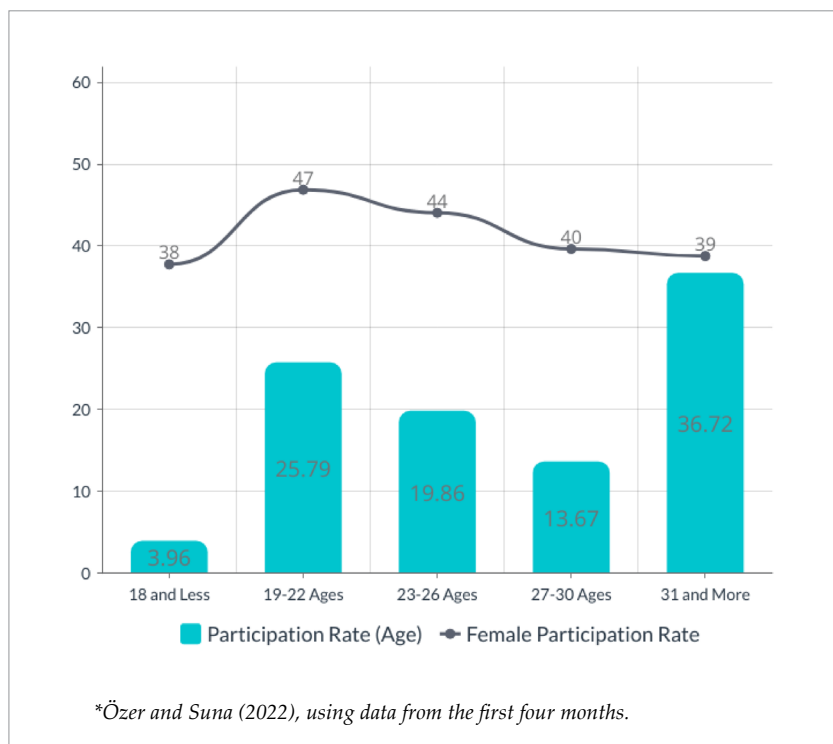


Figure 25: Distribution of Age and Gender in VTC Skill Development Program*



5.7.3. Establishing public education centers for the disabled

"Public Education Centers (PECs) for the Disabled" were established to provide vocational education to all segments of society and to increase access by prioritizing disadvantaged groups. The purpose of these centers is to provide VET and employment opportunities to adults with a variety of disabilities. By taking into account the special needs of individuals with disabilities, 112 centers were established in a short period of time. MoNE has completed the necessary plans for establishing at least one Disabled Public Education Center in each of the 920 districts by 2023.

Overview

Technology has brought many opportunities along with the ongoing global transformation, but it has also forced societies into a period of significant change. As a result, society as a whole must develop the skills necessary to adapt to this change. Further, the rapidity of this transformation necessitates quick action in order for society to adapt. In the literature, VUCA (Volatility, uncertainty, complexity, ambiguity) is defined as a period with many breaks and uncertainties.

During the VUCA period, VET offers a wide range of possibilities for social transformation through its flexible solutions and practice-based training. Because of its strong ties with the labor market, it can respond quickly to changes in the business world; Moreover, it can provide individuals beyond the school age with the necessary skills through lifelong learning activities. In terms of supporting sustainable development and enabling society to adapt to change, VET occupies a privileged position.

The transformation of VET initiated in Türkiye in 2018 aims to support the country's development process on the one hand and to establish a VET system that is compatible with global change on the other. Taking concrete steps to solve the chronic problems that have plagued VET in Türkiye for many years has been the most important feature of this period. Both economic and implementation aspects have been considered in the planning of improvement policies, and progress has been made through the setting of quantitative targets. Throughout the projects, the scale was kept at a level that represented the entire country, and improvements did not focus on any particular region. As part of this study, these improvements were discussed in detail and compared to global examples in order to assess their similarity.

The image below clearly demonstrates that substantial progress has been made in all aspects of global trends as part of the transformation initiated in the VET system in Türkiye since 2018. Among the notable achievements, the most significant steps have been taken towards designing an agile and resilient VET system, capable of adapting to evolving demands. Moreover, there has been considerable effort in enhancing the attractiveness of VET in Türkiye, making it an appealing and viable option for students across the country. Consequently, the greatest advances in the transformation have been made in addressing the chronic problems of VET in Türkiye. It is widely recognized that the quality of vocational education is determined by its ability to respond to the needs of the labor market and to provide students and adults with the skills they need to succeed in the modern world. As a result, the existing ties between the labor market and VET have been significantly strengthened, and the labor market has assumed a central role in the design and implementation of VET initiatives. Throughout the process of transformation, the labor market and vocational education have been seamlessly integrated to work towards a shared objective.

These steps have also contributed to making vocational training more accessible and flexible. In vocational secondary education, apprenticeship education has been given a much greater weight, which has been limited for many years. A recent example of exemplary practice in the area of inclusion is the opening of the "Public Education Centers for People with Disabilities". As a result of this initiative, a novel approach has been formulated to enhance the vocational skills of disadvantaged citizens. Through a short-term and employment-oriented "mastery compensation program," which aligns with international examples in adult education, nearly 900 thousand adults have actively participated in the program within a single year.

For the establishment of a globally competitive VET system in Türkiye, these steps must be resolutely continued. Therefore, this transformation process, which prioritizes Türkiye's needs and also takes global trends into account, also plays a significant role in contributing to the sustainable development of our country.



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A NEW ROADMAP FOR RESKILLING AND UPSKILLING (R&U) IN TÜRKİYE: VOCATIONAL TRAINING CENTER SKILL DEVELOPMENT PROGRAMS*

*Özer, M., & Suna, H., E. (2022). A new roadmap for reskilling and upskilling (R&U) in Türkiye: Vocational training center skill development programs. *Kastamonu Education Journal*, 30(4), 914-924.

The recent technological developments and digitalization lead to major social consequences (Perc, Özer & Hojnik, 2019; Phillips, 2011). These consequences include significant changes in the way we communicate, transfer our knowledge, family dynamics, use technology in our daily life (Antonucci, Ajrouch & Manalel, 2017; Roztocki, Soja & Weistroffer, 2019; SimonaMioara, 2012). The way we exchange information and interact rapidly changes (Vasliescu et al., 2020; Zilian & Zilian, 2020). The technological developments –particularly artificial intelligence (AI) and automation technologies- cause major improvements in production and service sectors (Fayomi, Adelakun & Babaremu, 2019; Özer & Perc, 2020). In particular, these technologies have led to revolutionary changes in the labor market (Frank et al., 2019). While these technologies promise a faster and almost errorfree production, they have remarkable effects on the labor market and society.

Today, it is impossible to refuse the impact of technological development and its effects on labor market and education (Joyner, 2017; Taghi Sheykhi, 2002). Therefore, societies which cannot adapt to these changes may lose their competitiveness in the global market. The global information and technological development are increasing exponentially (Roser & Ritchie, 2013). Based on last predictions, while the global information until 2016 was larger than it was 10 years ago, it will be at least ten times more in 2025 compared to 2016 (IDC, 2017). The countries' response to this development will be determinative for their future.

The continuous improvement of production technologies is important for both producers and users. Technological developments provide efficient outcomes when a qualified human source uses them effectively (Doucette & Parsons, 2020; Frankiewicz & Chamorro-Premuzic, 2020). Therefore, the quality

of human capital becomes even more critical. As Frankiewicz and Chamorro-Premuzic (2020) mentioned “transformation is not about technology, it is about talent”.

Technological transformation also remarkably changes the needs of the labor market (Bughin et al., 2018; Grundke et al., 2018; Özer, 2020a, 2020b, 2022). A recent estimate showed that approximately 375 million employees will have to transfer to new professions in a short time (McKinsey Global Institute, 2017; Ra et al., 2019). Another prediction indicated that around 57% of jobs in OECD countries are at risk of some degree of automation (Frey & Rahbari, 2016).

While the transformation changes the needs and expectations of the labor market, skills are affected in diverse ways. Highly routine jobs including manual sewers, telemarketers, account clerks, cargo and freight agents are among the jobs most affected by automation (de Vries et al., 2020; Frey & Osborne, 2013; Ra et al., 2019). A hierarchy has emerged over time in employee skills demanded by the labor market: while the demand for non-routine works has increased greatly, the demand for routine works declined concurrently. The fact that routine tasks require low cognitive and psychomotor skills causes them to be copied by automation easier. On the other hand, the need for analytical skills such as critical thinking, problem solving and social-emotional skills are increasing.

The uncertainty of future jobs is a second challenge of transformation (Genz, 2022). While digital technologies take over jobs through automation, they also lead to new jobs (Genz, 2022; McKinsey Global Institution, 2016). Therefore, the quality of human resources becomes prominent in ambiguous times. A qualified human resource with high adaptation skills will be needed in the future labor market.

Which policies will be best in a period of rapid transformation and uncertainty? Large-scale studies may give important insights for better policies. The findings of the Programme for the International Assessment of Adult Competencies (PIAAC) showed that at least 10% of adults in OECD countries have significant gaps in basic verbal and numerical skills (OECD, 2013). The percentage of adults with inadequate digital skills for today's digital world is substantial (OECD, 2016a). These adults can still contribute to the economy; however, the current skill deficiencies are major drawbacks for economic development.

Countries use education systems as a main tool for both upskilling and reskilling (CEDEFOP, 2020; Hamburg, 2021). Therefore, education takes responsibility for training students in the education age and developing the skills of adults. The PIAAC results contributed to the extending of adults' lifelong learning opportunities in many countries. In the EU area, "The new skills agenda for Europe: Working together to strengthen human capital, employability and competitiveness" and "Upskilling pathways: New opportunities for adults" (CEDEFOP, 2020) projects have been initiated. The International Labor Organization (ILO) has published the 2030 agenda for the development of adult skills (ILO, 2021). In brief, countries implement related projects to increase their adults' skills for a better and competitive future.

Türkiye is among the countries that urgently need the adults' reskilling and upskilling (Gür et al., 2012). Firstly, the PIAAC results indicated that the verbal and numerical literacy skills of adults in Türkiye are significantly below the OECD average (OECD, 2013). The verbal and numerical literacy of a major share of adults (45.7% in verbal literacy and 50.2% in numerical literacy) was lower than second level. On the contrary, the proportion of adults who report difficulties in using basic digital

skills is well above the OECD average (OECD, 2016b). The second reason is that a significant share of the employees in Türkiye work in routine jobs. This indicates that a significant portion of employees are working in jobs with a high risk of automation. Third, the digitalization and the transformations regarding Covid-19 pandemic increase the importance of adaptation skills. Therefore, there is an urgent need for mechanisms for reskilling and upskilling for these employees in Türkiye.

During the recent transformation of the vocational education and training (VET) system in Türkiye, a new mechanism is built for upskilling and reskilling of adults. Vocational training center (VTC) programs, which have made significant improvements in recent years, are restructured as skill development programs with the practice-focused training. These programs are harmonized with the demands of the labor market and provide practice-based training. Graduates have the opportunity to upskill and re-skill through short-term skill development programs. This study aimed to evaluate the first four months of VTC skill development programs through students' participation and demographic data. In this context, the demographic distribution of the students, their preferences in diverse fields and participation in the skill development programs were examined.

Literature Review

Adult skills are vital for individuals to keep up with today's conditions and adapt to constantly developing technologies (UNESCO, 2022). Studies on this subject underline that adult skills are not sufficiently prioritized despite their economic and social importance (Boeren & Rubenson, 2022). Studies on the education of adults began to come to the fore especially in the 1990s. In the "Jomtien Declaration for Education for All" in 1990 and the Fifth International Conference for Adult Education held

in 1997, it was emphasized that adult education gains importance in increasingly aging societies (Biao, 2022).

Adults' skill development is evaluated within the scope of "quality, inclusive and equitable education opportunities that are accessible to everyone with a lifelong learning approach" among the sustainable development goals (WEF, 2016). Although skill development is included in the SDGs and its importance is often emphasized, participation in these trainings is still very low. In one of the current studies on this subject, even in countries such as Denmark and Switzerland, where participation in adult education is highest, participation rates are partially above 25%. Türkiye, on the other hand, is among the countries with the lowest participation in adult education among these countries, with a participation rate of less than 5% (UK Government, 2014). In this context, the participation to adults' skill development programs, which is gaining importance, has not yet reached the desired level and incentive mechanisms are needed.

Eurydice (2021) grouped the countries based on the rate of adults with low competence in population and participation in adult education programs. The first group (A group), which includes countries such as Denmark, France and Luxembourg, is in the where the proportion of individuals who have not completed high school (with a low level of competence) is relatively low and the proportion of adults (between 25-64 years old) participating in educational activities is above the average. Türkiye; Spain, Greece, Italy and Portugal are in group C, where the proportion of individuals who have not completed high school (with a low level of proficiency) is relatively high and the proportion of adults (between 25-64 years old) participating in educational activities is below the average. As emphasized in the study, countries that need more to adults' skill development programs for their

adaptation to today's changes and for economic development are in groups C and D (Eurydice, 2021).

In this context, various programs and projects implemented by different countries to improve the skills of adults were briefly introduced.

Vocational Packages for Adults (Sweden)

In Sweden, the National Education Agency has prepared vocational training packages to promote the skills of adults. Packages prepared for different professions according to the current needs of the labor market have been developed for the training of adults at high school level and above. National vocational education system experts, labor market representatives, and occupational standards experts collaborated to ensure that the more than 50 vocational packages developed are aligned with labor market demands (Eurydice, 2021).

Education and Training Guarantee for Young Adults (Austria)

As of 2017, Austria has launched a national project to support the education of young adults up to the age of 25. Targeting unemployed young adults who have not completed high school, the program aims to equip them with vocational skills through vocational programs. Within the scope of this program, state-funded apprenticeship trainings are provided to young adults, and intensive on-the-job training is offered in these trainings (Eurydice, 2021).

Second-Chance Schools (Greece and Romania)

Greece and Romania aim to develop the skills of adults who have not completed their compulsory education for various reasons. In this context, two-year full-term programs or three-year evening

programs for adults have been developed in Greece. In the Romanian program, on the other hand, as a result of 720 hours of intensive practical training, adults are provided with vocational skills. It is anticipated that the support provided in this context will facilitate the transition of adults and minorities to education and employment (Eurydice, 2021).

On-the-Job Training Program (Norway)

Norway recently launched a new program aims to develop the professional skills of adults who do not have formal education in their profession despite practicing a profession. In this program, on-the-job training is prioritized, apprenticeship-based training is provided, and adults are exempted from the core areas of the national curriculum. As a result of the short-term intensive training programs, these adults can have valid and professional certificates about their jobs while updating their professional skills (Eurydice, 2021).

Train to Gain (England)

UK initiated a specific program to provide vocational skills to individuals aged 25 and over. There has been a significant participation in the program, in which there is cooperation with employers from different sectors in the process of acquiring skills for adults. 1.2 million adults participated in the program, which lasted for about three years, and 554,100 of which were successfully completed and were entitled to receive certificates. Interviews with employers also yielded important inferences about the effectiveness of the program: 75% of employers stated that employees develop skills that are compatible with their jobs, 66% stated that long-term employment and competitiveness of employees increased, and 50% mentioned that their productivity increased. In interviews with employees, it was stated that the

training increased their skills and self-confidence, and 25% stated that they provided an increase in their wages, promotions or other benefits (UK Government, 2014).

Shortened Apprenticeship (Switzerland)

Switzerland initiated a new program for equipping adults with skills in diverse profession through short-term apprenticeship training. With this program, adults can improve their professional skills and increase their employability thanks to the practiceoriented training in different fields (Eurydice, 2021).

National Targets for Adult Education

With these projects, countries strive to achieve the quantitative targets they have declared for skill development of adults. For example, Croatia aims to increase participation in adult education from 10,531 to 13,350 in its announced Strategic Plan for the years 2019-2021. Hungary has set a goal of reducing the proportion of adults with low digital skills in the 25-64 age group from 60% to 30% through the adult education programs. Within the framework of the Master Plan for 2013-2020, Slovenia has prioritized the participation of at least half of the unemployed adults in educational activities (Eurydice, 2021).

Vocational Training Center Skill Development Program in Türkiye

For many years, vocational training center (VTC) programs provide apprenticeship and mastership training as a part of the Turkish VET system (Özer, 2019, 2021a; Özer & Suna, 2020). These practice-based training aims to acquire professional skills via practical training four days a week in working environments, and one day of theoretical training at school. VTC programs correspond to the dual system which has been used for many

years in Germany and Switzerland, which have strong links with the labor market (Özer, 2021b).

The practice-based training of programs contributes greatly to the students' employability. Based on a recent study by the Ministry, 88% of the graduates work in their field of education, and approximately 75% of these graduates work in companies where they received on-the-job training (MEB, 2018). The higher employability in VTC programs compared to the other VET programs and general high school programs indicates the strong links with labor market needs (Özer & Suna, 2022).

After the significant improvements made to VTC programs, MoNE presented "VTC skill development programs" for reskilling and upskilling of adults. The skill development programs are launched in 2022 as short-term (6-8 months) VET courses. These programs include a revised version of VTC programs with a similar practice-based VET approach. Graduates are provided employment priority or guarantee through protocols.

Method

Research Design

This study is designed as a descriptive research to examine the how new VTC skill development programs were perceived and reacted by target group of adults in the first the last four months. The descriptive studies aim to collect detailed information to systematically describe a phenomenon, situation, or population in target (Creswell, 2002). The design is appropriate for using the data of participants for examining their response to these programs with a comparative approach.

Participants

The participants of the study consist of 79,256 adults who receive training in VTC skill development programs in Türkiye. The participants demographic distribution is shown in Table 1.

Table 1: Demographic Distribution of Participants

CHARACTERISTICS	GROUP	f	%
GENDER	FEMALE	33,303	42.02
	MALE	45,953	57.98
AGE	18 OR LESS	3,066	3.87
	19-22	20,458	25.81
	23-26	15,757	19.88
	27-30	10,841	13.68
	31 OR MORE	29,134	36.76
EDUCATION LEVEL	UPPER-SECONDARY	47,405	59.81
	VET UPPER SECONDARY	16,753	21.14
	ASSOCIATE DEGREE	8,603	10.85
	UNDERGRADUATE DEGREE	6,371	8.04
	GRADUATE DEGREE	124	0.16
TOTAL		79,256	100.00

Table 1 shows that the participants has a remarkable diversity in demographic characteristics. Gender distribution is mostly balanced, and young adults (19-22; 23-26 and 27-30 years old) have a higher share among participants. On the other hand, comparatively older adults (31 years or more) have a significant share (36.8%) in participation. Graduates from upper secondary education has the largest share (59.8% for general upper secondary education and 21.1% for VET upper secondary education), however, participants with associate degree and undergraduate degree has a significant rate (more than 19%) among participants.

Data Collection

The data of this study is collected through the General Directorate of Vocational Education and Training (GDVET) of MoNE. The GDVET uses data of participants to monitor the response of target group and report the diversity in participation. The data of 79,256 participants were anonymized and presented with demographic variables including gender, age, and level of education. In this manner, authors used a secondary-data which is already collected by the GDVET. Ethical considerations were prioritized and no personal information beyond the research purposes is received by authors.

Data Analysis

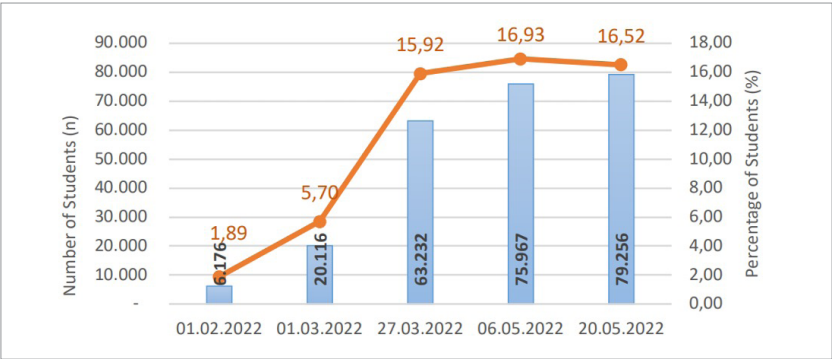
This study focus on the reponse of target group to skill development programs in the last four months. We used decriptive comparisons in number of students and ratios representing demographic characteristics. Our aim was to examine how the participation and diversity of participants have changed over time. Based on the fact that the data represents the population of VTC skill development programs, the statistical significance tests were not performed.

Results

Participation and Diversity in Skill Development Programs

Figure 1 shows the number of students enrolled in VTC skill development programs in the last four months.

Figure 1: Number of Students in the VTC Skill Development Programs and Ratio in All VTC Programs



As seen in Figure 1, the number of students in skill development programs has increased greatly in about four months, from approximately 6,000 to 79,000. The dissemination of the programs to all VTC institutions in Türkiye increases the demand from graduates. Consequently, the rate of skill development programs in all VTC programs has increased significantly from 2% to 17%. In this context, the skill development programs experienced a great increase in demand and required supply is presented.

Figure 2: Age and Gender Distribution of Students in the Skill Development Programs

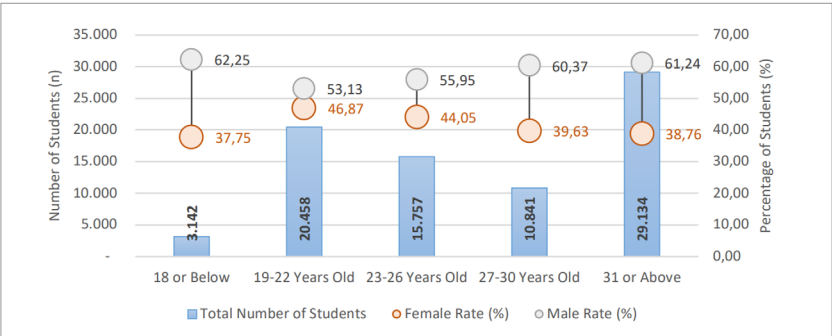


Figure 2 shows the age and gender distributions of graduates in VTC skill development programs.

As seen in Figure 2, the skill development programs are demanded by graduates from different adult groups. 29,134 (36.72%) of the 79,332 participants are at the age of 31 and above with the highest participation rate. Additionally, relatively younger participants aged 19-22 (25.79%) and 23-26 (19.86%) showed high demand for the programs. This indicates that adults who have had a relatively long time since graduation have higher demands for upskilling and reskilling.

Figure 2 also shows that approximately 42% of adults in skill development programs are female. Although there is a minor difference between groups, this rate indicates a significant improvement for female representation in the VET system. The rate of female in programs is significantly higher than the rate of female in other VET programs (39.5% in the 2018-2019; 37.4% in the 2019-2020; 36.3% in the 2020-2021 academic year [MEB, 2019, 2020, 2021]). Thus, VTC skill development programs represent the type of VET programs with the highest representation of females. While the gender distribution is comparatively balanced in the 19-22 age group with relatively recent adults (53.13% for males, 46.87% for females), the gap widens for those aged 31 and above (61.24% for males and 38.76% for females). The increased participation of females in the labor market over time in Türkiye may lead to this gap for skill development programs.

The distribution of adults in different vocational fields and age groups are given in Figure 3.

Figure 3: Distribution of Students by Vocational Fields and Age Levels*,**

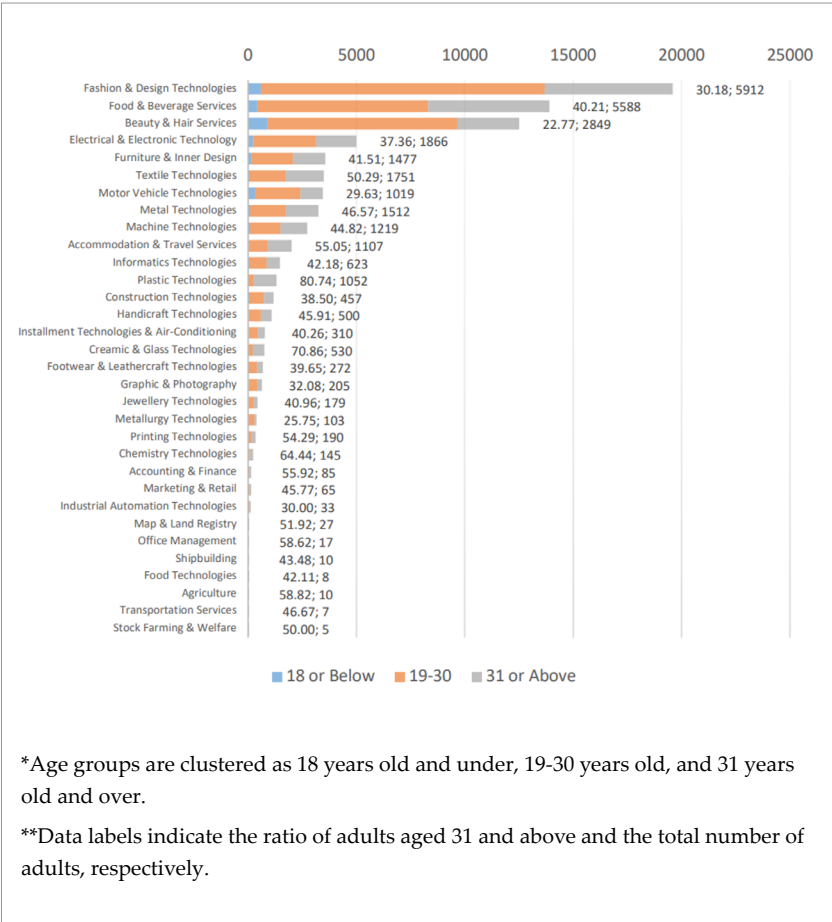
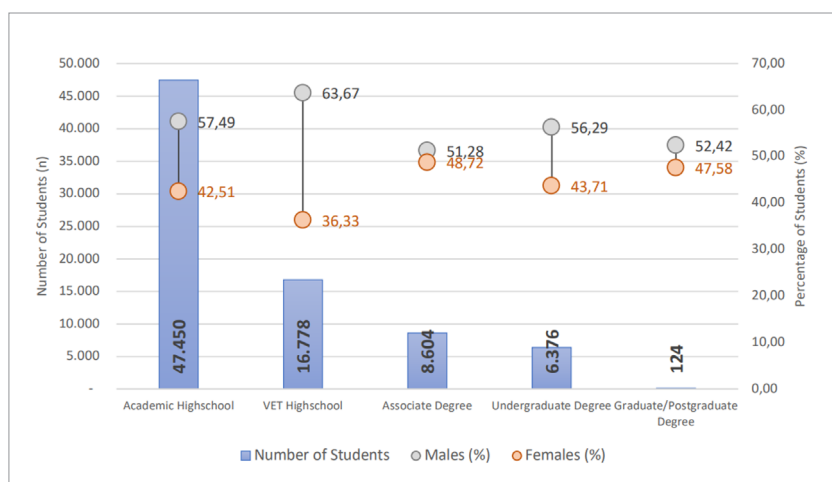


Figure 3 shows that the adults prefer mostly fashion design technologies, food and beverage services, and beauty and hair care services. The number of participants in these three fields corresponds to approximately 18% of all students in VTC skill development programs. This indicates that fields related to the service sector and design skills are highly demanded by adults.

The fields with intensive production such as electrical-electronic technology, textile technology, motor vehicle technology, metal technology and machinery technology are also among ones with comparatively high demand. The distribution of adults in vocational fields are also similar to the field distributions in other VTC programs (Özer & Suna, 2022). Therefore, both students and adults have similar patterns and their demands toward vocational fields are mostly related to employability.

Figure 3 indicates that adults aged 31 and above more likely prefer production-oriented fields. 80.74% of the adults prefer the plastic technology, 70.86% of those in the field of ceramics and glass technology, 64.44% of those in the chemical technology, and 50.29% in textile technology. On the other hand, adults between the ages of 19 and 30 are more highly clustered in the service sector and design-oriented fields such as fashion and design technologies (66.82%), beauty and hair care services (70.18%), and food and beverage services (56.62%).

Figure 4: Education Level and Gender Distribution of Students in Skill Development Programs

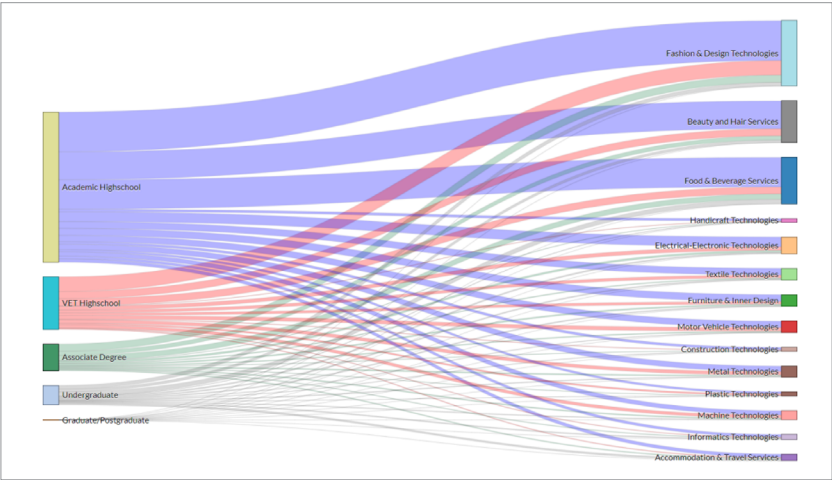


The vocational field distribution of adults by education levels and gender is given in Figure 4.

As seen in Figure 4, a significant share of students (80.9%) in skill development programs are high school graduates (59.8% general high schools, 21.1% VET high schools). On the other hand, these programs are also demanded highly by tertiary education graduates. The share of adults with associate degree, graduate degree or postgraduate degree in skill development programs is approximately 19%.

Figure 4 also indicates that students’ gender distribution varies according to the education level. The widest gap is among VET high school students (63.67% for males, 36.33% for females), and the gender gap is mostly similar with other VET programs (MEB, 2019, 2020, 2021). The gender distribution of adults with tertiary education degrees is mostly balanced: almost no gender gap in associate degree (51.28% for males, 48.72% for females) and postgraduate students (52.42% for males, 47.58% for females).

Figure 5: The Relationship Between the Education Level and their Vocational Field*



*Vocational fields with a student number of 1,000 and above are considered

Finally, the relationship between participants' field preference and their level of education is given in Figure 5.

Figure 5 shows that the preference of adults in VTC skill development programs from different education levels are homogenous. The preference patterns of students from different education levels are quite similar. Particularly, fashion design technologies, food and beverage services, and beauty and hair care services were highly preferred by students from all education levels. Therefore, the level of education does not seem to be related with field preferences.

Discussion and Conclusion

While technological developments force the globe into economic and social changes, the role of human resources in managing this change is becoming more critical. Countries attach a great importance to raise qualified human resources to increase their competitiveness in this transformation. The major transformation and required human resources are the major reasons for restructuring of education systems after the 1990s.

Adult skills are important for this transformation because they still have a significant potential to contribute to the economy and raise their employability. However, the adults need suitable mechanisms to develop and update their skills in this new period. Türkiye is among the countries with an urgent need to prioritize upskilling and reskilling of adults. The large-scale studies show that a significant part of the adults in Türkiye has a need for improvement in basic literacy skills and digital technologies. Based on the clear need, a new systematic mechanism was established in Türkiye to ensure the upskilling and reskilling of adults other than public education courses and VET courses.

Since 2021, MoNE has led significant improvements in VTC skill development programs for upskilling and reskilling. These programs use the practice-based training of traditional VTC programs. Adults acquire new vocational skills (upskilling and reskilling) via development programs lasting six to eight months. The structure of skill development programs were similar with the mentioned international programs for adults' reskilling and upskilling. As mentioned practices in diverse countries, most skill development programs were developed based on the needs of labor market, they focus on the vocational skills through practiceintensive apprenticeship training. The skill development training programs were disseminated over Türkiye in less than four months, and started to provide training in 183 branches in 33 vocational fields. This study evaluates how these programs serve for upskilling and reskilling of adults in the first four months through participation and demographic characteristics.

Firstly, finding showed VTC skill development programs are in great demand from diverse adult groups. Consequently, the number of participants increased from 6000 to nearly 79000 in about four months. This demand from adults- the target group- is very important in terms of demonstrating the need for mechanisms to reskilling and upskilling. The results of the PIAAC cycles in which Türkiye participated, and the studies carried out by Eurydice (2021) and the UK Government (2014), clearly demonstrate the need for Türkiye to develop the skills of the adult population. The rapid increase in demand indicates that adults in the target group also think that these programs for skill development can fill a significant gap. In this manner, VTC skill development programs have become an important source for upskilling and reskilling as an addition to public education centers in Türkiye.

Secondly, the gender distribution of participants is highly balanced (44% female and 56% male) compared to VET standards. The relatively high participation rate of males in vocational education and training (VET) programs has become more genderbalanced in the VTC skill development programs. Policies that encourage females' employment are very important in Türkiye, where males have a significant advantage in terms of employment participation rate among adults (ages 25-64). This is an important development in the context of "providing equal opportunities for everyone in education and the business world", which is often emphasized by international organizations such as the International Labor Organization, OECD and the World Bank (ILO, 2020). The International Labor Organization, with its work in 2020, emphasized that while the employment rate of females is 34.5%, while it is 71.8% for males, it has determined the promotion of female employment as a priority in Türkiye (ILO, 2020; OECD, 2019; Pimkina & de la Flor, 2020). Programs developed in this context have the potential to increase female employment through short-term vocational training.

The analysis regarding the relationship between preference and educational level yield significant inferences about the diversity of demand. It is worth noting that approximately 19% of the adults graduated from higher education institutions (as associate degree, undergraduate and graduate). The results show that adults have a significant demand for reskilling and upskilling when appropriate mechanism are developed. On the other hand, the structuring of the developed programs to directly meet the demands of the labor market indicates the request of target group from by those diverse education levels to benefit from the high employment opportunities of VET. Another finding supports this implication is that programs for the service sector and various production areas, where employment rates are relatively high in Türkiye, are more demanded by target group.

The fact that these vocational fields are preferred, regardless of education level, shows that adults who complete the program prioritize to fields with a high probability of rapid transition to the labor market and employment. It may be considered as an expected result, because the unemployment rate between the ages of 25-74 and the NEET rate between the ages of 15 and 24 are higher than OECD average (OECD, 2022a, 2022b). In this context, VTC skill development programs have the potential to contribute significantly to reducing the unemployment rates and NEET rates in Türkiye.

The diversity of participants, and the major increase in demand and participation in the first four months indicate that skill development programs have significant potential for adults' upskilling and reskilling. This rapid increase in diversity and participation also shows that there is a significant gap in the reskilling and upskilling mechanisms in Türkiye. In addition, the long-term implementation of these programs over time will contribute to Türkiye to participate among the countries that set targets for the skill development of adults and act in line with these targets.

Limitation and Implication

The evaluation of VTC skills development programs is limited with the participants' data from first 4-months of program announcement. The similarities of the programs with international practices is highlighted and recent statistics of participants are evaluated in consideration of target group. Further research is needed for the data-based examination of impact of VTC skill development programs. The findings and reviews represent the first reactions of target group and performance evaluation of VTC skill development programs in a short-term interval.

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VOCATIONAL EDUCATION AND TRAINING AS “A FRIEND IN NEED” DURING THE CORONAVIRUS PANDEMIC IN TÜRKİYE **, **

* Özer, M. (2020d). Vocational education and training as “A Friend in Need” during the Coronavirus pandemic in Türkiye. *Bartın University Journal of Faculty of Education*, 9(2), 1-7.

Vocational education and training (VET) has been one of the most discussed type of education in Türkiye for years. Expectations from VET have always been high, but finding solutions to the problems and systematic solution approaches have always been lacking (Özer, 2018; Özer, 2019a; Özer, 2019b; Özer & Suna, 2019; Özer & Suna, 2020). The interventions in the past such as 'coefficient regulation', which prevented access to higher education, brought VET to the point of paralysis (Özer, 2018). The steps taken later by the Ministry of National Education (MoNE) to reduce the effects of this negative intervention could not completely solve the problem because of the fact that the coefficient regulation has significantly reduced the tendency and selection of successful students to VET. In the following years, the practice of placing students in all schools by exam in transition to high school, similar to the coefficient regulation, led to the clustering of comparatively low-achieving students in VET. On the other hand, although very important projects regarding the improvement of VET have been carried out, not enough arrangements have been made in the labor market to improve the personal rights and conditions of VET graduates (Özer & Suna, 2020).

Despite all these problems, MoNE followed a holistic approach for the solutions of VET-related problems, especially after announcing the 2023 Education Vision, and addressing VET and its problems as a whole, and serious improvements appeared in diverse areas within a short time (Özer, 2018; Özer, 2019a; Özer, 2019b; Özer & Suna, 2019; Özer & Suna, 2020). Especially the steps taken jointly with the sectors that are involved in cooperation in employment throughout the entire education process spread rapidly throughout Türkiye. The right steps soon began to produce positive and solid results in a short while. The number of students enrolled in VET increased by 17% and the

number of students enrolled in vocational training centers (VTCs) increased by 62%. Tendency and selection of high-achieving students to VET also increased in the same time interval, and students from the top 1% of achievement rankings are placed to VET high schools for the first time. Now, VET becomes an important option for academically high-achieving students, too. MoNE has made intensive efforts to increase production capacity, especially in VET. Necessary arrangements were made by MoNE and production in VET institutions increased by 40% a year. Although all these steps did not solve all the problems in VET, they showed that if right steps are taken towards the solution, the positive results are seen immediately and hopes for the future of VET increase.

Nowadays, we have been going through extraordinary days due to coronavirus pandemic. In this context, MoNE has activated the production capacity of VET in Türkiye, and VET high schools has begun to produce the materials to prevent the spread of pandemic. They produced materials in diverse areas from cleaning materials to mask production, disposable aprons and overalls to face protection shields. Thus, it is seen that VET immediately produces the products, which are hard to supply otherwise, for society and presents them to the service of society. The R&D studies are also intensified to increase the variety of products produced in VET. The devoted teachers and students of VET have always prioritized the demands of society in such difficult conditions, have activated their production capacity and supported Türkiye with their services. This behavior has increased the respectability of VET community, coming right after the healthcare professionals, among all segments of society have become thankful to staff and students of VET in Türkiye.

Beyond these praises, it is useful to think once again about the problems of VET at such a time. The importance of strengthening VET and raising the human resources demanded by the labor market are accepted by all segments. All public institutions and organizations, business world, and non-governmental organizations have carried out important studies on solutions to the problematic areas of VET. However, VET has been perceived as a chronic problem for years in Türkiye. Why are the desired results not achieved even though there is such a strong agreement regarding the strengthening of VET?

Like all countries, Türkiye is going through a difficult process due to coronavirus. On the one hand, MoNE improves the large-scale service regarding distance education in this process by continuously improving the quality, and on the other hand, a different production move in VET by focusing on the products that are difficult to procure is realized. Today, the VET community has been mobilizing all its opportunities and facilities for Türkiye. For this reason, this short article summarizes the production moves in VET within the scope of coronavirus measures and briefly reviews the areas of improvement that need to be handled in a short time in order to further strengthen VET, which functions as a protective shield in difficult days.

Background on Turkish VET

The period in which VET was remembered with gratitude more than today is 30-40 years ago. In this period, the government undertook almost all of the production and service sectors, therefore, the main source of employment was the government. On the other hand, VET schools were public schools, too. Therefore, planning was relatively easy when the source of employment and education were the same. Since the number of students especially in VET was compatible with the employment demand

of government, the demand for VET was above the capacity and most schools accepted students according to their examination scores. Accordingly, VET graduates were also able to find jobs in public institutions easily. Therefore, this period maintains its place in memories as a period when there is no widespread problem related to the employment of VET graduates.

The strong relationship between education and employment has started to weaken with the growth of the education system. On the one hand, with the increasing demand for education, the education system is constantly growing, on the other hand, the government has gradually withdrawn from the production and service sectors and private sector has taken the place of government. In other words, the main source of employment for VET graduates is now the private sector, not the public institutions. The share of the private sector in VET stands out as an important parameter in country comparisons in this transition phase, which is experienced in parallel with the developments in the world. In particular, when looking at Continental Europe, the governments withdraw from the production and service sectors, while the private sector has also undertaken the burden of VET.

On the contrary, the private sector has not taken the burden of VET when entering the production and service sectors and the VET has continued to remain on the shoulders of the government in Türkiye. By 2012, the share of the private sector in VET was below 1%. However, in the countries which are in the forefront of VET in Continental Europe, the share of the private sector in VET is well above 50%. Although incentive mechanisms have been generated to encourage the private sector to be deeply inclined to VET, share of private sectors in VET is approximately 6% in 2020 in Türkiye, and it is still quite low compared to Continental Europe countries. Unlike the general trend in the world, the low share of private sector in VET services in Türkiye has negatively

affected the education-employment relationship and has made it difficult to VET graduates to work in their fields of education.

Increasing the scale and capacity of VET, without thinking or ignoring the employment capacity, has worked against the VET in the long term and has led to the supply of VET graduates more than that demanded by the labor market, which necessarily forced the VET graduates to be employed outside of their education areas (Özer, 2019a; Özer, 2019b; Özer & Suna, 2020). As a result, skills mismatches in the labor market have now become a chronic problem. On the other hand, external interventions such as “coefficient regulation” shocked VET, which already had a problematic situation, and all the effort was put to take VET out of shock with the developments, however, previous experiences left in society traces of trauma (Özer, 2018). This situation disrupted the flow of high achieving students towards VET, thereby reducing the likelihood of meeting expectations from VET graduates.

It is obvious that improving the quality of VET is quite important. However, the main parameter in re- strengthening VET is the matching capacity of employment and the labor market with VET. Otherwise, the steps to be taken to strengthen VET will be insufficient and permanent solutions will not be produced.

MoNE also intensified its efforts to pull the supply-demand relationship into a rational ground in order to strengthen the education-employment relationship. The relationship between levels of VET institutions and industry locations and capacities of VET is determined by plotting the Turkish VET Map (MEB, 2018). The current capacity is restructured within the framework of this map. Thus, both the employment rates of VET graduates in their field of education will improve and skill mismatch in the labor market and its cost will decrease.

MoNE in Türkiye has taken very important steps to strengthen VET in recent years and it is still implementing these efforts with a systematic approach and determination. MoNE has developed a new approach especially in cooperation with sectors. In this collaborative approach, it is determined jointly to carry out training processes, to update the curriculum together, to support the students' skills training and teachers' on-the-job and professional development training, to give scholarships to successful students and to give priority to the employment of graduates. These efforts started to be productive and give tangible results in a short time. VET has become an important option for high-achieving students and students from the top 1% achievement rank are placed to VET high schools for the first time for many years.

Significant Productions by VET in a Time of Crisis

The Target is to Meet the Cleaning Material Needs of All Schools and Institutions

MoNE has focused on the production in VET high schools in order to maintain the hygiene, cleaning and disinfection works of all schools within the scope of coronavirus measures. While those products were being produced in 28 vocational and technical Anatolian high schools (VTAHs) before, this number has increased to 44 high schools now by making the necessary investments to meet the needs of all schools. MoNE made the necessary investments and increased the number of schools producing cleaning materials to 100 in April in order to meet the needs of other institutions beyond the schools. In addition, MoNE provided the raw material needs of VET high schools and delivered them to the schools. At present, VET high schools have reached a production capacity to meet all cleaning material needs of approximately 54 thousand schools in 81 provinces.

10 Million Masks will be Produced Monthly

The medical mask is the most needed product due to the coronavirus epidemic in these days. It is difficult to provide the necessary supply of masks and prices are constantly increasing. MoNE has taken a quick step in this regard. The necessary investments have been made to produce medical/surgical masks in 37 vocational high schools in 21 provinces and the first masks started to be produced. One million masks were produced in a very short time and delivered primarily to healthcare workers. The capacity to produce 10 million masks per month has been created. On the other hand, seven provinces are chosen to produce masks in N95 standard. Production is proceeding as it is planned. VET high schools are constantly working to meet the demands.

Priority was Given to Production of Disposable Materials

In this process, the demand for disposable products has increased due to the importance of hygiene. In this regard, MoNE has invested in VET and started to produce products such as disposable gowns and overalls especially for healthcare workers. Production continues intensively in almost all provinces. On the other hand, manufacturing of products such as disposable forks and knives is started in selected pilot VET schools in Istanbul.

500 Thousand Face Protection Shields are Produced per Month

In order to contribute to the solution of the troubles in the production of face protection shields, which are especially important for healthcare workers, R&D studies have been completed and the production of face protection shields has started. In VET high schools, 500 thousand face shields can be produced per month. Face shields are produced both with an automated production line and by using 3-D (three-dimensional) printers. In addition, the molds of the face shields are created beyond the 3-D printer, and mass production of face shields started in the field of plastic technology of VET high schools.

Ultrasonic Surgical Mask Machine is Manufactured

R&D studies that have been going on for months have yielded results and an 'Automatic 3-Layer Wire Ultrasonic Surgical Mask Machine' was produced. The machine started to produce about 200 thousand masks per day. The machines are produced in Istanbul and they will be installed in other VET high schools and the monthly production will reach 10 million surgical mask capacity soon.

MoNE will Manufacture the Machine which Produces Masks in N95 standard

MoNE took a very important step while accelerating its production in VET high schools within the scope of coronavirus measures and began preparations for producing the machine that produces masks in N95 standard. While there is no problem in getting the equipment related to the production of surgical masks in the market, machines producing N95 masks are either very few or not accessible. For this purpose, MoNE started R&D for machinery production. The development process continues successfully and the first machine is set to be produced in April 2020. The purpose of this attempt is to have the 'know-how' of all stages of production and to contribute to the increase of production capacity by sharing this know-how with the companies producing in this field in Türkiye.

Production-Oriented R&D Studies are Emphasized

R&D studies focusing on the production of biomedical products are needed in the field of healthcare. In this context, an intensive R&D study was performed in order to produce the machine producing the surgical mask and the machines producing the mask in N95 standard. In addition, R&D studies are ongoing to produce respirators.

Produced Materials are Given Free of Charge to those in Need

MoNE tried to meet the needs of the market reliably, and on the other hand, launched a new social service project. The '*VET High School Students Meet Our Families*' project has been successfully implemented by the Ministry together with VET students and teachers for years. For example, in 2018-2019 academic year, 13.217 teachers and 39.197 students in 1.889 schools in 81 provinces participated in the project and 54.000 families are supported (Özer, 2019a). Within the scope of the project, small maintenance and repairs, paint-whitewashing, furniture repairs, small repairs of the unusable or obsolete items at homes belonging to the elderly and needy families were taken care of. In addition, care and cleaning services, personal care and life-facilitating aids were provided for the elderly people who need personal care.

In this context, MoNE changed the scope of this project to fight with coronavirus pandemic in a more effective way. Within the new scope of project, the cleaning and disinfectant materials, and surgical masks have been produced and delivered to the elderly and needy families free of charge in 81 provinces with the coordination of Governorships. In addition, the face shields and masks have been delivered to healthcare workers free of charge with the coordination of Ministry of Health.

Discussion and Conclusion

Nowadays, millions of people struggle from coronavirus pandemic and it is effective on any aspect of our daily lives (Callaway et al, 2020; Gibney, 2020; Ting et al., 2020, UNESCO, 2020). Several precaution steps are taken against spreading the coronavirus to a larger extent by governmental authorities in diverse countries (Ting et al., 2020; ETF, 2020). Due to the scale and impact of pandemic, it is not possible to consider coronavirus pandemic just as a matter of public health (OECD, 2020). As

a consequence of this precautions, education is one the most affected fields by coronavirus pandemic (UNESCO, 2020). In the last week of March 2020, it is estimated that 1.3 billion of children and youth, which is close to 80% of the student population of the world is affected by school closures in 138 countries (UNESCO, 2020). This huge effect of coronavirus on access to education created a big pressure on educational authorities all around the world. Most countries spend effort to establish and update distanced education platforms to sustain their educational processes (ETF, 2020; OECD, 2020). Concurrently, educational activities has started which aim to enlighten all educational stakeholders about the coronavirus pandemic (OECD, 2020).

Although there is a big crisis in education in global scale, vocational education and training (VET) has a great potential to contribute to the fight with coronavirus pandemic. A strong VET system can support the needs of society especially in the times of crisis by means of its production and adaptation capacity. Based to its importance and potential, VET continues to be an education path where intense discussions are concentrated all over the world (Özer & Perc, 2020). With widespread use of automation, especially supported by artificial intelligence technologies, in the production and service sectors, the skills gained by VET have brought into question (Perc et al, 2019). In a new era of autonomy and artificial intelligence, VET systems around the world are restructured in a way that VET students can gain more general skills and train in broader vocational fields (Hanushek et al., 2017; Solga et al., 2014). Problem solving and adaptation skills of VET students according to changes in labor market will increase with restructuring. In times of crisis like today, it is apparently seen that needs of society and labor market can change dramatically within a short time. VET system can support the society with its production and adaptation capacity. To increase the production and adaptation capacity of VET and support R&D studies, it

is quite important to equip students with general skills along with vocational skills and provide them flexible educational opportunities (Hanushek et al., 2017; Özer & Suna, 2020; Solga et al., 2014).

A strong VET system can support the society with both its production capacity and social inclusion projects. As can be seen in this brief study, VET becomes an important source in the manufacturing of highly-demanded products in times of crisis. Using the R&D and diverse vocational skills of VET students and teachers, VET has the power to adapt its processes in a quite short time to meet the need of the society. Additionally, VET has the capacity to support the people, especially those who need, with social inclusion projects based on vocational skills of students and teachers. In this manner, support of VET system for society is multidimensional and it becomes even important in times of crisis.

Considering the experience of these crisis days, the quick steps that need to be taken for removing the VET from being a problematic area have been mentioned briefly. The weakness of the relation between VET and employment is still at the center of many problems related to VET in Türkiye (Özer & Suna, 2020). Therefore, the main step to be taken in strengthening VET again is dependent on strengthening the education-employment relationship.

This study briefly shows how quickly the VET has responded to society in meeting the needs during the coronavirus pandemic in just two years after the Türkiye's 2023 Educational Vision was declared. The points mentioned in this study underline how the strengthened VET can quickly respond to social demands especially in the days of crisis.

In sum, while MoNE successfully conducts this process by mobilizing all its facilities, it activates the production capacity of VET and makes a modest contribution on its own scale in the manufacturing of the products that are needed in Türkiye now. Thus, while VET high schools are mobilized for the Türkiye's urgent needs and support the society, they get out of the shadows of labeling such as coefficient regulation and "type of school that is not preferred" and become more and more normalized. MoNE aims to save the VET high schools from their historical burdens, to establish a genuine relationship with the production chain and to make VET high schools more respected in the society. All of devoted executives, teachers and students in VET are currently doing R&D studies in all provinces of Türkiye in order to increase the production capacity and diversity. All other units of MoNE also provide all kinds of support to VET high schools. In addition to diversifying production and placing products on the market, it is essential to continue efforts to attract high-achieving students to VET and to increase employment of VET graduates in their field of education.

In order to strengthen the VET-employment relationship and further align the supply of graduates with the demands of the business world, steps towards the labor market are also needed. When incentive mechanisms are created in the salaries of VET graduates working in their field of education and when the labor market has the appropriate mechanisms, this upside trend in VET will be sustainable and it will be discussed how VET can be higher quality rather than being remembered with old problems.

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THE PROFESSIONAL DEVELOPMENT OF TEACHERS IN TÜRKİYE: FIRST-YEAR OUTPUTS OF THE NEW APPROACH BY THE MINISTRY OF NATIONAL EDUCATION*

*Özer, M., & Suna, H. E. (2023). The professional development of teachers in Türkiye: First-year outputs of the new approach by the Ministry of National Education. *Kastamonu Education Journal*, 31(2), 319-330.

There is consensus among researchers, practitioners, and policymakers that teacher qualifications contribute to educational quality (Blömeke, Olsen & Suhl, 2016; Darling-Hammond, 2000; OECD, 2005; Yoon et al., 2007) since the teacher occupies an important position in the classroom and thus determines a variety of educational elements. Considering the individual characteristics and differences of students, they guide the learning process and select appropriate teaching methods.

Professional development and training of teachers are assessed in two contexts: the first is the initial training process (e.g., preservice training or initial teacher training), during which teacher candidates acquire professional skills; and the second is the training they receive during their tenure in the profession (for example, in-service or professional teacher training) (Boeskens, Nusche & Yurita, 2020; OECD, 2019). The initial training of teachers is vital to ensuring that they have adequate skills when they begin their professional careers, but in-service training allows them to enhance their skills and adapt to the changing demands of education (Boeskens, Nusche & Yurita, 2000; OECD, 2019, Reynold, 1999; Yoon et al, 2007). As a result, although initial teacher training is critical to the development of teachers' pedagogical skills, its impact decreases if it is not followed by a well-established in-service training program (Boeskens, Nusche & Yurita, 2000).

As educational norms and teacher expectations have changed over the past few decades (Boeskens, Nusche & Yurita, 2000; OECD, 2009; Reynolds, 1999), in-service trainings has become increasingly important. New technologies in education have created new opportunities for learning and access to information (Guggemos & Seufert, 2021). Students' learning needs are also becoming more complex due to the increased number of national and global migrants, as well as the diversity of students' backgrounds and learning preferences (OECD, 2015). Teachers must adapt quickly to these new conditions, utilize current educational materials, and integrate technology effectively (Guggemos & Seufert, 2021; OECD, 2015; De la Calle et al., 2021).

Technology advancements and easy access to information have a significant impact on educational transformation (De la Calle, et al., 2021; Winthrop, Williams & McGivney, 2016). Global efforts to provide students with skills rather than information are indicative of this shift. Therefore, teachers must be able to make informed decisions regarding students' learning and assess students' skills using appropriate methods and tools. Recent educational approaches emphasize students' skills and literacy, as well as their ability to use their knowledge in new conditions (European Parliamentary Research Service, 2020).

Similarly to the COVID-19 pandemic, which spread across the globe in 2020, has also presented new challenges for education systems and students' learning (CEDEFOP, 2020; Istenic, 2021; Özer & Suna, 2020; Özer et al., 2017). As educational processes migrate to virtual environments, teachers are required to possess a wide range of digital and pedagogical competencies (De la Calle et al., 2021; OECD, 2021). In this period, teachers possessing effective digital skills were able to use alternative methods to overcome educational challenges. Since the pandemic, education has become increasingly digital, making it even more critical for teachers to become proficient at using these technologies and to transfer their competencies to digital environments (OECD, 2021).

Professional development training is essential to teachers' adaptation to the aforementioned changes (ILO, 2015; Opfer, 2016). A rapid pace of change in education and the accompanying increased expectations placed on teachers make the characteristics of in-service training activities, particularly important. PISA 2015 results indicate that teachers in higher-performing countries participate in more professional development training than their peers in lower-performing countries. In order to maximize educators' adaptation to changing technologies and methods over time, most education systems design in-service training with a lifelong education approach.

There are three steps involved in the professional development of teachers that affect student outcomes (Yoon et al., 2007). The first step of the process is to provide training to teachers to improve

their knowledge and skills. By revising their knowledge and skills, teachers can improve classroom instruction, which in turn enhances students' skills to a higher level (Yoon et al., 2007). Several studies have demonstrated that in-service professional development is most effective when it is practice-oriented rather than theoretical, considers teacher needs, examines the reasons behind students' learning styles and behaviors, is structured as interrelated modules, and occurs in educational institutions (Darling-Hammond, 2017; Desimone, 2009; Kennedy, 2016, 2019; Opfer, 2016). Therefore, effective in-service training systems must prioritize the skills that teachers are able to directly transfer to their classroom processes and the learning of students. Furthermore, best practices recommend that in-service trainings should be interrelated and conducted throughout the year in educational environments rather than only at certain times of the year.

The professional development of teachers in Türkiye has become systematic and regulated since the 1980s (Aydın, 1987; Baykan, Güngen & Ünal, 1987; Günel & Tanrıverdi, 2014; Ülker, 2009). For many years, professional development trainings were traditionally planned and implemented by the Ministry of National Education (MoNE) (MoNE, 2022; Yazıcı & Gündüz, 2011), using a centralized approach for both planning and implementation to meet the training needs of teachers. As the primary provider of teacher training, MoNE contributed significantly to the development of teachers' skills. There is evidence that Turkish teachers consider these trainings beneficial and find them satisfactory (Ay, 2022; Doan, 2009; Kaleci, 2018; Nemli, 2017; Özer, Suna & Sunar, 2021). It should be noted, however, that this centralized approach has also posed structural difficulties. The first limitation is that teacher training can only be conducted by a limited number of teachers based on the available resources (EARGED, 2006). Since the content of professional development modules is decided centrally, scholars have emphasized that teachers' opinions should be considered when developing these modules (Arslan, 2015; EARGED, 2006; Gülşen & Yörük, 2021). Additionally, these trainings have the potential to be improved in terms of their quality, including the competence

of the trainers, the practicality of the skills emphasized, and the environment in which they are conducted (Arslan, 2015; EARGED, 2006, Aslan Keleş, 2019).

At the end of 2021, the MoNE initiated an important paradigm shift in teacher professional development. This policy change encompassed factors that increase the effectiveness of training, research-based development areas, and feedback from teachers. The new approach represents a significant shift from the conventional centralized approach to a decentralized and school-based approach to teacher training. This redesigned professional development policy takes into account the local needs of each school when determining the training requirements. This is the first time that schools have been allocated a unique budget for teacher training. As a result of this approach, schools will have greater autonomy in identifying and meeting their training needs. Meanwhile, MoNE has developed a new digital platform to improve the efficiency and coverage of online teacher training, the Teacher Informatics Network (BA). The delivery of face-to-face teacher trainings has been transferred from external venues to educational institutions and teacher training centers. Additionally, the new approach emphasizes the importance of practical skills and application of knowledge. In sum, the revised professional development model takes teachers' opinions into consideration when identifying training needs, increases school autonomy and provides financial support for training that supports teachers' practical skills, and repositions schools as teacher training hubs.

The new approach takes important steps toward addressing long-standing issues regarding teacher professional development in Türkiye. As a result of the improvements, multiple dimensions of teacher education have been addressed and solid solutions have been provided for the issues raised in the related studies. The purpose of this study is to evaluate the initial results of the revised teacher training approach in Türkiye through participation data and teacher opinions after the first year of implementation in 2022. Data from the first year of the new approach was compared with previous five-year data on teacher training. Participation rates, individual participation

rates, seniority and gender distributions, and teacher satisfaction levels were analyzed and compared.

Findings From Türkiye on Teacher Professional Development

The purpose of this section is to present the findings of the existing studies on the training and professional development of teachers in Türkiye alongside the best results from the OECD Teaching and Learning International Survey (TALIS) cycles. There has been a considerable amount of research that highlights the need for centralized planning and implementation of teachers' in-service trainings in Türkiye (EARGED, 2006). It has been indicated that centralized planning does not adequately consider teachers' opinions on educational needs or the differences between regions in educational needs (Yüner, 2022). As well as motivation loss, teacher trainings are largely compulsory, and feedback is rarely gathered or considered in the planning and implementation of such trainings (Arslan, 2015; EARGED, 2006; Gülşen & Yörük, 2021). Additionally, teachers have expressed a need for greater participation in trainings, as well as clarity regarding the selection of teachers and school administrators for professional development (Aslan Keleş, 2019).

The need for more practical, application-based activities in teacher training has also been highlighted by studies. Educators and school administrators believe that professional development modules tend to emphasize theoretical knowledge rather than practical skills (EARGED, 2006; Aslan Keleş, 2019). According to both Turkish teachers and administrators, practical training enhances classroom performance and student outcomes more effectively than theoretical training (Boeskens, Nusche & Yurita, 2020; Yoon et al., 2007). Finally, previous studies have recommended expanding the range of topics covered in trainings in order to provide teachers with a wider selection of options (EARGED, 2006). Consequently, the revised approach in Türkiye has incorporated social-emotional learning and leadership skills, as well as more traditional and foundational subjects.

The OECD Teaching and Learning International Survey (TALIS) provides information on teacher qualifications and professional development activities across more than 20 countries. Since the TALIS focuses on professional development in education and presents comparative findings, it is one of the most frequently cited studies on teacher qualifications. Results from the TALIS cycle in Türkiye provide valuable insights into the professional development of teachers in the country.

Turkish teachers participated in only 74.8% of professional development activities over the past year and a half, which is the lowest level among the 23 participating countries (OECD, 2009). Furthermore, the duration of teacher training in Türkiye (14.9 days) was shorter than the TALIS average (17.3). As a result, Türkiye performed lower than the majority of OECD members in terms of participation in professional development and training duration in 2008. Moreover, the results indicate that Turkish teachers are more likely to participate in theoretical professional development activities, such as conferences and seminars, as compared to the TALIS average of 48.9%. However, practice-oriented activities, such as workshops and lectures, are less popular in Türkiye (62.3% in Türkiye, TALIS average of 81.2%). Teachers from Türkiye were most commonly cited for low professional development participation because it was difficult to find appropriate training (46.6% in Türkiye, 42.3% on average TALIS), conflicting trainings with work (34.7% in Türkiye, TALIS average 46.8%), or family responsibilities (31.2% in Türkiye, TALIS average 30.1%).

The results of the TALIS 2018 cycle -ten years later- indicate that the participation rate of Turkish teachers in professional development activities has increased to 93.6%, which remains below the OECD average of 94.5% (OECD, 2019). Table 1 summarizes the results of TALIS 2018.

Table 1: Participation in Professional Development Trainings in Türkiye —TALIS 2018

	Teachers			School Administrators		
	Primary School	Junior-Secondary School	Upper-Secondary School	Primary School	Junior-Secondary School	Upper-Secondary School
TR	95.2	93.6	92.1	95.4	96.3	94.7
TALIS AV	95.8	93.8	94.8	97.0	98.7	98.9
	Primary School		Upper-Secondary School			
	Women	Men	Women	Men		
TR	95.4	94.9	91.7	92.6		
TALIS AV	95.9	95.4	95.0	94.7		
	Primary School		Upper-Secondary School			
	5 Years or Less	More than 5 Years	5 Years or Less	More than 5 Years		
TR	97.7	94.7	92.4	92.0		
TALIS AV	95.2	95.9	93.2	95.0		

Table 1 indicates that 95.2% of primary school teachers, 93.6% of junior secondary school teachers, and 92.1% of upper secondary school teachers in Türkiye reported participating in professional training in the past year. The rates are slightly lower than the average for TALIS. Similarly, school administrators in the Turkish sample participated at a rate above 90%, but below the average of TALIS.

In addition, Table 1 indicates that there is virtually no gender gap in participation in professional development training. At both the primary and secondary levels, the difference in participation rates between men and women is below 1%. As well, the data indicate that fewer senior teachers participate in professional development trainings in Türkiye slightly more than their more experienced colleagues.

Methods/Materials

Research Design

The study is designed in the form of descriptive research. Descriptive research allows researchers to describe a phenomenon, occurrence, or event, that happens in the present (Creswell, 2002). Fraenkel and Wallen (1993) also mention that descriptive research includes explaining, analyzing, and classifying something of interest through various statistical and data collection methods such as surveys, interviews, questionnaires, and tests. This involves the identification of characteristics of a particular phenomenon through observation, or exploration of correlation between two or more variables (Williams, 2007). This descriptive design is used to investigate how the participation and satisfaction indicators have changed after a comprehensive revision of the teacher training approach in Türkiye.

Data Collection and Analysis

Data which is analyzed in this study is already collected by the Information Technologies (IT) Department and Directorate General for Teacher Training and Professional Development (TTPI) (Official Letter No. E-87446353-622.03-73544294). In this manner, this

study analyzed the secondary data on teachers' participation and satisfaction with teacher trainings. The study considered the total participation (each teacher is considered as the number of his/her participation), and the individual participation (each teacher is considered once independent from the number of his/her participation). Based on the TALIS findings indicate that the participation may change based on gender and ISCED levels, the study also involves the change in participation by gender and ISCED levels. The participation and satisfaction data from the last five years (2018 and 2022) were selected to have an appropriate benchmark for interpretation.

This approach allows analyzing the changes in participation, and satisfaction within subgroups and years. Data on teachers' satisfaction was collected by the IT and TTPI Departments after the completion of teacher trainings through a "post-training survey". The common items in the survey regarding face-to-face and online trainings were considered to increase the comparability over the years. Research has demonstrated that the survey provided reliable and valid results regarding teachers' opinions in a variety of areas (Özer, Suna & Sunar, 2021). The study does not use any statistical analyses focusing on the significance of means or percentages between the subgroups or years due to the fact that data teacher population data is considered. In this manner, the study does not use samples as the representative of the teacher population. In both the participation and satisfaction aspects, teacher data is completely anonymized. Thus, researchers analyzed the participation and satisfaction level with demographic and professional variables without any identifying information about teachers.

Research Population

The population of the study consists of teachers who participated the professional development trainings (in-service trainings) between 2018 and 2022. From the individual perspective (each teacher is considered once independent from the number of his/

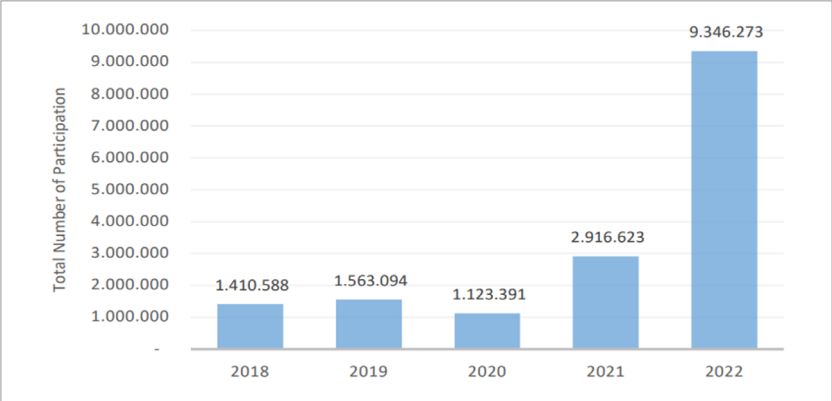
her participation), the yearly number of teachers who participated in the in-service trainings has varied between 458.641 and 1.006.053 between 2018 and 2022. As mentioned in the data collection and analysis section, this study used no sampling method to maximize the advantage of teacher population data.

Findings

Participation in Training Programs

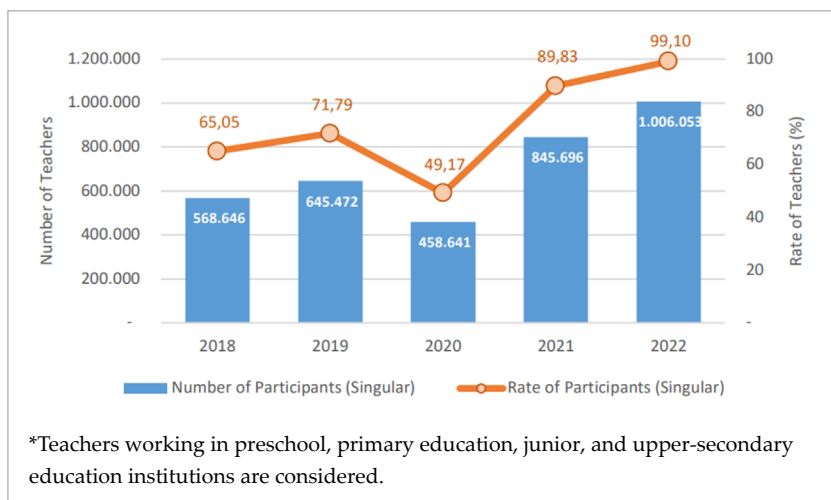
Teachers' professional development is greatly influenced by the extent and quality of their training. In order for these trainings to have a significant impact, it is important to determine the number of teachers who benefit from them. For a country with more than 1.2 million teachers, the inclusiveness of trainings is even more imperative. Participants in in-service training were evaluated based on the number of total participants and the number of individual participants. Participants who participated in more than one activity were included in the total number of participants. In order to gain insight into how many teachers attended at least one in-service training, it is necessary to measure individual participation. Over the past five years, the total number of Turkish teachers who have participated in in-service training is shown in Figure 1.

Figure 1: Total Participation in Professional Development Trainings (2018-2022)



As shown in Figure 1, teachers' participation in professional development activities increased significantly between 2018 and 2021, reaching a peak in 2022. Prior to the COVID-19 pandemic, participation ranged between 1.11 million and 1.56 million, before slowing down to 1.12 million in 2020 as a result of limitations caused by the pandemic. Compared to previous years, there was a significant increase in teacher participation in trainings in 2021 due to the return of face-to-face education in schools. Lastly, the new approach significantly accelerated participation, resulting in more than 9 million teacher training participants by 2022. As compared to 2021, the increase is approximately 220%, and compared to 2020, it is 731%. As a result of the new approach, the inclusiveness and coverage of teacher training programs have increased significantly.

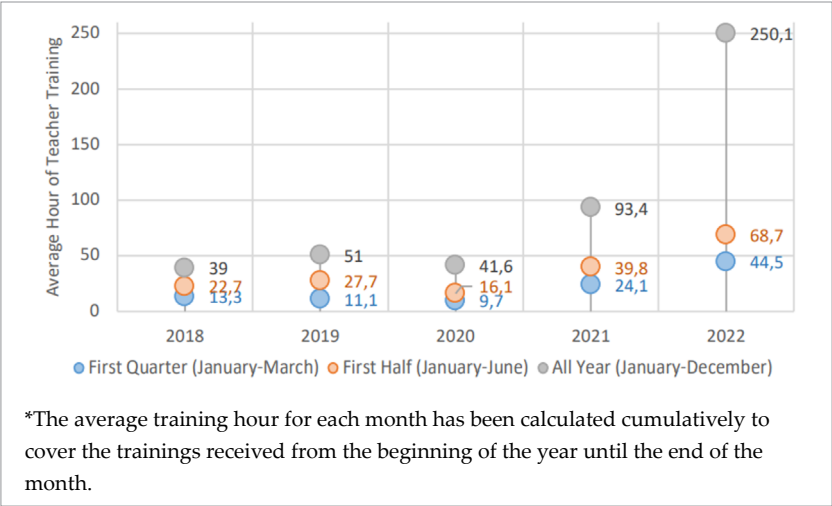
Figure 2: The Number and Rates of Individual Participation in In-Service Trainings (2018-2022)*



The figure illustrates the significant increase in the number of individual teachers participating in professional development activities toward 2022. During the period between 2018 and 2020, the percentage of teachers participating in trainings varied between 49% and 72%, but in 2021 it reached 90%. More than one million teachers

attended trainings by the end of 2022, which means that almost all teachers in the Turkish education system took part in trainings. Based on the similarity between Figure 1 and Figure 2, it appears that the increase in individual participation reflects the increase in total participation. The results of this study demonstrate a significant increase in the number of teachers participating in teacher training programs, as well as a rise in individual participation. The figure below illustrates the change in teacher training hours between 2018 and 2022, in terms of the first quarter, first half, and first year.

Figure 3: Average Hours of Training per Teacher (2018-2022)*



As shown in Figure 3, the average number of hours of education per teacher began increasing after 2020, reaching its peak (69 hours) in 2022. Training hours, which were comparatively close in 2018 and 2019 (22.7 hours in 2018, 27.7 hours in 2019), decreased significantly in 2020 (16.1 hours) due to pandemic restrictions. Teacher training, which increased significantly in 2021, reached its highest level in 2022. As compared to previous years, the data indicates significant increases, especially during the second half of the year (from July to December) 2022. The average number of hours of training per teacher in 2022 has increased by nearly twofold compared to 2021

(93.4 hours in 2021; 250.1 hours in 2022) and by fivefold compared to 2020 (41.6 hours in 2020; 250.1 hours in 2022). As a result of these findings, teachers received longer periods of training as well as a substantial increase in total participation. Based on ISCED levels, Figure 4 illustrates the changes in participation rates in Türkiye over the past five years.

Figure 4 illustrates the significant increase in participation among teachers from all education levels since 2021, which peaked in 2022. On the other hand, the participation rates from 2020 indicate a negative impact of the pandemic across all levels of education. Furthermore, it indicates that participation at the preschool and elementary levels increased in 2018 and 2019. Over the course of these years, participation rates consistently decreased from pre-school to upper secondary education. This resulted in a greater level of participation by junior and upper secondary teachers in the new approach to teacher professional development. By 2022, Türkiye's teacher participation rates in professional development trainings exceeded the TALIS averages. Over the past five years, Figure 5 provides information on the distribution of women who have participated in in-service training.

Figure 4: The Participation Rates of Different Levels of Education (2018-2022)—ISCED levels*

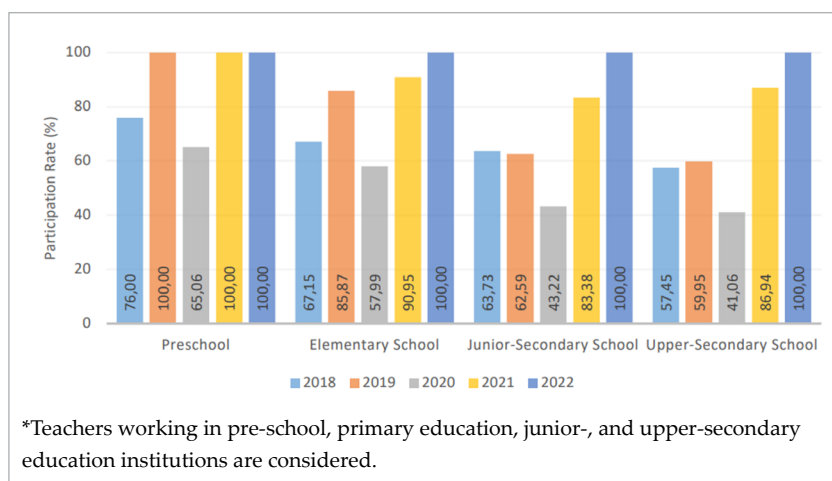
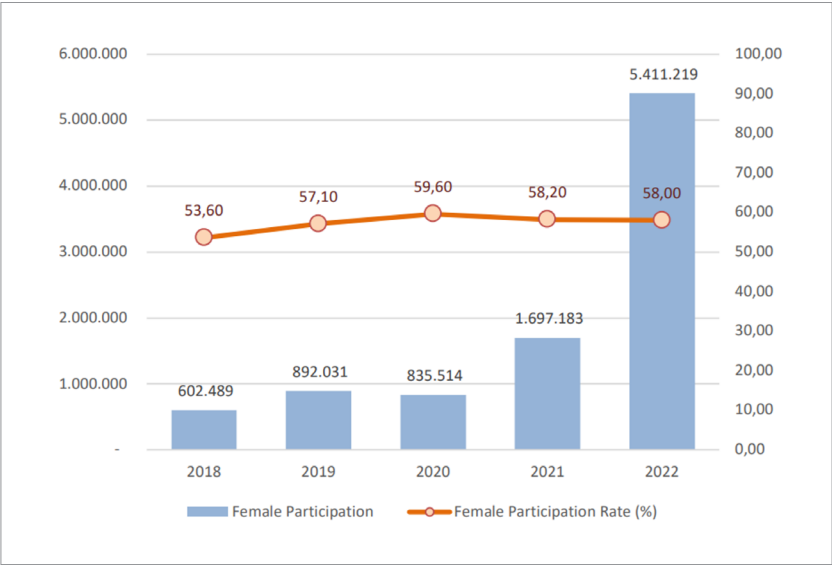


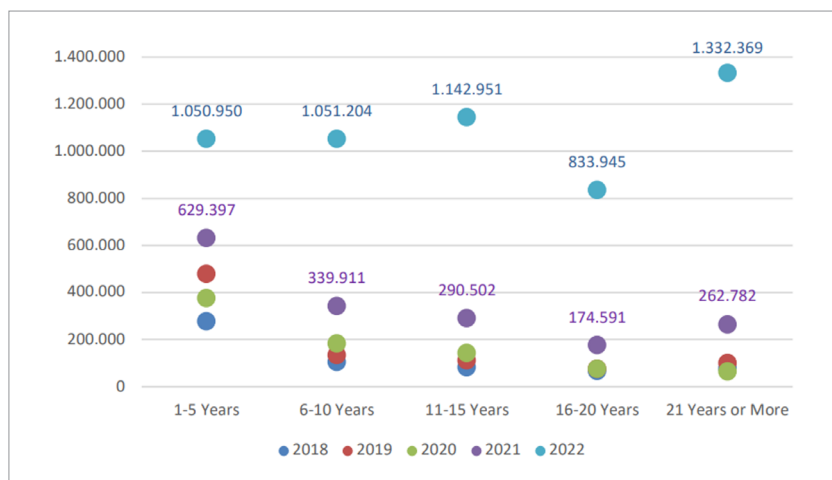
Figure 5: The Participation of Women In-Service Training Participants (2018-2022)



According to Figure 5, teacher participation in professional development in-service training differs significantly by gender. As approximately 60% of current teachers in Türkiye are women, it is important to measure and monitor this ratio across in-service trainings. A greater proportion of women are represented in teacher training in this context. Figure 5 shows that even though the number of women participating increased from almost 602 thousand to 5.4 million (reaching almost tenfold) in just five years, the higher rate of participation of women remains unchanged. As a result, new approaches lead to a greater level of inclusivity and reflect the gender distribution of teacher populations in Türkiye. In Figure 6, the gender distribution of teachers who completed in-service training between 2018 and 2022 is shown.

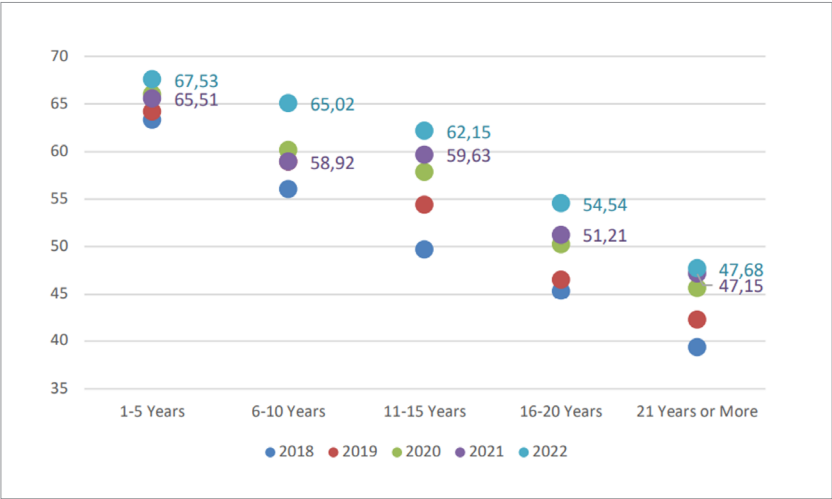
Figure 6: Participation of Women in Teacher Trainings by Seniority Group (2018-2022)

a. Number of Participation by Women In-Service Trainings by Seniority (Total Participation Approach)



As shown in Figure 6, there was an increase in women's participation in all seniority groups in both the frequency and rates. Although the training participation rate of women is higher among cohorts that are relatively new to the teaching profession, it decreases as seniority increases. However, the share of participation by women peaked in all seniority groups. The participation has increased nearly twofold (within the first five years) and sixfold (within the first 21 years or more) compared to 2021. Women teachers' seniority distribution has become more balanced in 2022. In particular, the percentage of teachers with more than 11 years of experience has increased significantly. This is also critical for increasing the representation of high-senior women teachers in professional development trainings.

Figure 6.b: b. Rate of Participation by Women In-Service Trainings by Seniority (%)-(Total Participation Approach)



Teachers' Satisfaction from In-Service Trainings

Over the past five years, Figure 7 shows the results regarding teachers' satisfaction with in-service training activities.

Figure 7: Teachers' Rate of Positive Responses to Diverse Aspects of Trainings between 2018 and 2022

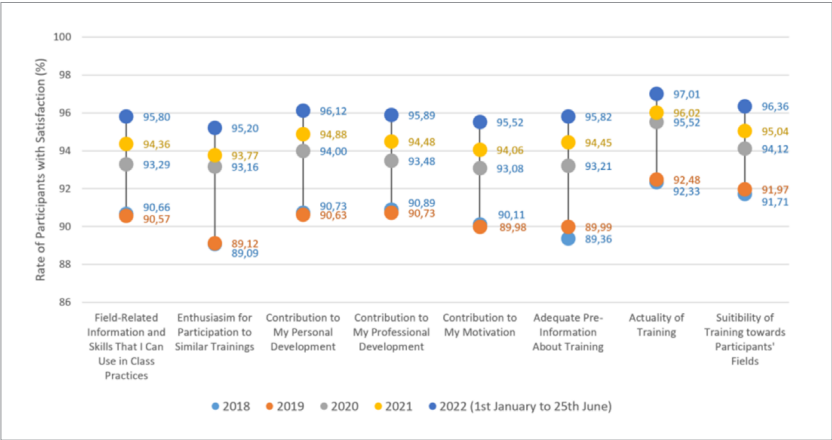


Figure 7 indicates that teachers were highly satisfied with the educational activities of in-service trainings; however, the level of satisfaction varied from year to year. Teachers' satisfaction with teacher training activities reached its highest level in all areas covered. It is important to note that the extent and coverage of teachers' training increased their satisfaction. In addition, the areas of greatest satisfaction since 2018 were the desire to participate in new trainings, the increase in teacher motivation as a result of the trainings, and the improvement of preliminary data.

Discussion & Conclusion

In-service training is an important mechanism for developing the skills of teachers and improving their abilities. Teachers are required to adapt to the profound changes in educational technologies, unexpected contingencies such as the COVID-19 pandemic, and the expansion of educational functions in the social sphere. The education system should therefore provide wellqualified professional development infrastructures for teachers and monitor the effectiveness of such infrastructures.

In Türkiye, in-service teacher training programs conducted by the Ministry of National Education (MoNE) have served as the primary mechanism for professional development for teachers. These in-service trainings have been structured by MoNE with a centralized approach for many years, with the Ministry of the Navy taking sole responsibility for designing, planning, and implementing them.

Despite the fact that previous research has indicated that teachers in Türkiye benefit from MoNE-designed in-service trainings (Ay, 2022; Doğan, 2009; Kaleci, 2018; Nemli, 2017; Özer, Suna & Sunar, 2021), these studies also provided valuable feedback on the areas that need improvement in order to enhance professional development nationwide. These studies recommended that trainings be designed in accordance with teachers' opinions, that practical skills be prioritized over theoretical knowledge, that

teacher and administrator participation be increased, and that training subjects be diversified. Thus, proposed models for in-service training include increasing school autonomy, allocating a specific budget for teacher trainings, establishing teacher training hubs in educational institutions, increasing the coverage and extent of trainings, prioritizing practical skills, and designing trainings according to a lifelong learning approach.

According to the data-based studies on training effectiveness, teachers' long-term feedback on teacher training is mostly consistent. The research suggests that effective in-service training should emphasize social and emotional skills in addition to academic subjects, place an emphasis on practice rather than theory, reflect teachers' opinions and needs, and take place in an educational setting. A teacher training program with these characteristics has a greater potential to accelerate student achievement.

Among the three priorities articulated by the Ministry of National Education at the end of 2021, teachers' professional development was identified as one of the themes of the 20th National Education Council, which brings together a wide range of stakeholders in the Turkish educational system. By incorporating feedback from teachers and key research findings on effective teacher training, the in-service training approach was significantly improved in late 2021.

The new approach to teacher training aims to achieve two objectives: 1) increasing the coverage and extent of trainings by maximizing participation, and 2) revising training subjects and content according to teacher needs. Therefore, MoNE revised the training program by adopting a practice-oriented approach, expanding and diversifying training subject matter, and repositioning schools as teacher training centers. The allocation of a school-based budget also increased the autonomy of individual schools in determining and meeting their teacher training needs. Additionally, a teacher and administrator mobility program was piloted to enable school staff to observe best practices in diverse schools throughout Türkiye and implement

these practices at their own institutions. In order to achieve this transformation, MoNE increased the budget allocated for in-service training by 35 times in 2022, amounting to approximately 300 million ₺.

As part of this study, we evaluated the initial results of the new approach on teachers' participation in and satisfaction with in-service trainings after the implementation of the first year, 2022. The preliminary results of the study indicate that the new approach resulted in a significant increase in participation in in-service training, exceeding the total number of participants since 2018. As a result, only half of 2022 is expected to have higher participation levels than the previous four years combined. In Türkiye, nearly all teachers have participated in at least one annual in-service activity for the first time. A significant increase in participation has also resulted in an increase in the average number of teaching hours per teacher, from 39 hours in 2018 to 250.1 hours in 2022 as a result of increased participation. As emphasized in the TALIS findings, teachers with greater seniority have participated significantly more than in previous years. In the period between 2018 and 2022, teachers with more than 20 years of experience more than doubled their participation in in-service training. Thus, the seniority distribution has become more balanced since 2021 as a result of an increase in the number of highly experienced teachers participating. According to the gender distribution data, women's participation increased in all seniority groups at the same time. All indicators of participation improved as a consequence of the improvements.

The second objective of this study is to illuminate teachers' levels of satisfaction with training. After the in-service training, teachers were asked to complete a training questionnaire to assess their satisfaction with the training. Across all aspects of the training, including content, subjects, implementation, and motivation, teacher satisfaction increased. In 2022, the percentage of teachers who believe that training contributes to their personal and professional development increases their motivation and improves

their practical skills peaked. The revised in-service training model has contributed to an increase in teacher satisfaction by taking into account the needs of teachers and diversifying the subjects. This is also important for alleviating the achievement gap between schools (Atar, 2014; Suna et al., 2021; Suna & Özer, 2021; Suna et al., 2020a, 2020b), which is a long-term problem of the Turkish education system (Özer, 2022a, 2022b). According to these findings, teacher satisfaction and access to in-service training increased concurrently in 2022.

With the enactment of the Teachers' Profession Law No. 7354 in 2022, MoNE has taken an important step towards further supporting teachers. A new approach to teacher education is introduced by this law, which promotes teachers' postgraduate education and encourages their postgraduate education. A clear definition of teaching as a career path will provide teachers with an improved experience with teacher training, as well as an increase in their personal rights (Özer, 2022a). Providing qualified in-service training for teachers leads to a cumulative increase in educational quality (Özer, 2022a, 2022b, 2022c). A strong in-service training program and the support of teachers' personal rights could lead to an increase in job satisfaction for teachers. When teachers find more opportunities to improve their skills and their well-being increases, these improvements will be reflected in their education processes, which ultimately will lead to continuous improvement in the education system. From the perspective of previous studies and working hypotheses, it is imperative to discuss the results and how they can be interpreted. It is important to consider the findings and their implications in the broadest possible context. There may also be a discussion of future research directions.

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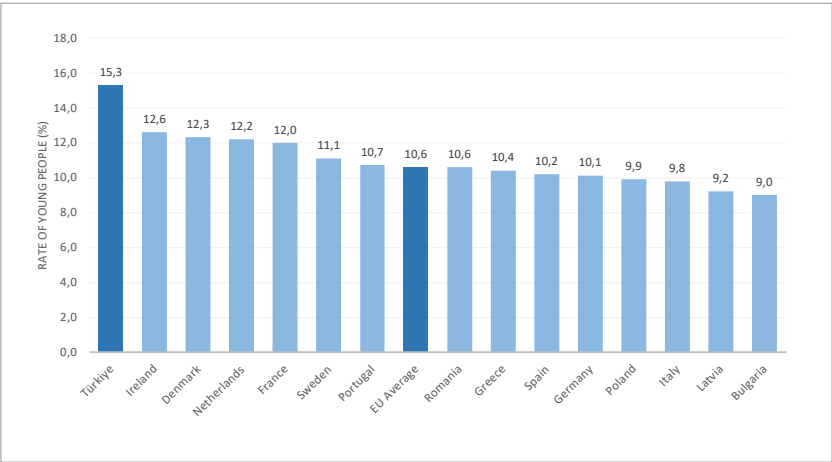
YOUTH NOT IN EMPLOYMENT, EDUCATION OR TRAINING (NEET): CURRENT POLICIES & IMPROVEMENTS IN TÜRKİYE

*Özer, M., & Suna, H. E. (2023). Youth not in employment, education or training (NEET): Current policies & improvements in Türkiye. TRT World Research Center.

The future of countries is closely related to the quality of the human resources they train and their ability to adapt to today's rapidly changing conditions. In this context, human capital has become the most valuable resource to increase the competitiveness of countries on a global scale. The increasing importance of human capital has resulted in further investments to be made to train more qualified human resources over time (Aghion et al., 2009). In other words, global investments to improve access to and the quality of education, especially after the World Wars, have grown continuously (Aghion, 2009).

Youth and young adults are among the most significant social groups in terms of sustainable economic development (OECD & ILO, 2014). The economic and social integration of youth and young adults who have completed the compulsory education period is the key to sustainable national development. Thus, youth and young adults are considered as the future of societies and their qualifications have an impact on the future of countries. In Figure 1, the rate of the young population in the total population of the European Union countries as of 2021 are given.

Figure 1: Youth Population Rates in Countries in the European Union and Nearby Regions



As seen in Figure 1, the young population continues to represent a significant part of societies in the EU and neighboring countries. When considering all EU countries, the young population between the ages of 15-24 constitutes 10.6% of the total population, while this rate is well above the EU countries in Türkiye. As of 2021, the 15-24 age group in Türkiye constitutes 15.3% of society. According to the estimations made by TURKSTAT, the rate of young population in Türkiye will continue to decline gradually, but even in 2080 it is expected to be 11.1%, above the current EU average (Turkstat, 2018). In this context, Türkiye's policies on youth employment and education, will be very decisive in terms of national development since it has an abundant youth population opportunity.

Evaluating the economic and social integration of this group due to its vital role in sustainable development (Filmer-Sankey & McCrone, 2012). Although "youth unemployment" and "labor force participation", which have been significant indicators and used for many years, are limited in representing the holistic integration of the group. In fact, these indicators consider entering the labor market and employability as the main performance factors. However, as young people's period in education is grows globally, the sharp boundaries between education and employment are weakening, and the rates of job change and turnover also faces a significant increase (Bowers, Sonnet, & Bardone, 1998; Roser & Ortiz-Ospina, 2016). Therefore, more inclusive indicators are needed to assess the integration of this group.

1. The Emergence of the NEET Indicator

The NEET index, which was first developed in the United Kingdom in 1988, was an answer to this search and the frequency of use increased greatly (Furlong, 2006; Holmes, Murphy, & Mayhew, 2019). The age range of NEET, which only reported the status of young people between the ages of 16 and 18 in education or employment at the time of its development, has been expanded over time (Holmes, Murphy, & Mayhew, 2019). NEET is determined as the proportion

of individuals in the specified age range who neither continue their education nor enter the labor market. Therefore, when calculating the NEET index, equal weight is given to continuing education and transitioning into employment. NEET is therefore more inclusive than indexes that prioritize labor market transition when assessing youth integration.

NEET, which covered a much more limited and youthful group in the years it was developed, has started to be used to cover a wider age range over time (Holmes, Murphy, & Mayhew, 2019). There are significant differences in the calculation of NEET today, both in terms of age range and the way it is defined (Eurostat, 2022; OECD, 2022; Turkstat, 2022). For example, while the age range of NEET is evaluated between 15 and 29 in Eurostat, the official statistical channel of the European Union, the NEET calculation is evaluated between the ages of 16 and 24 and between the ages of 15 and 29 by the OECD (Eurostat, 2022; OECD, 2022). The Turkish Statistical Institute also takes into account the age range of 15 to 24, which is used more frequently, similar to the EU, in the calculation of NEET (Turkstat, 2021).

NEET was developed with a view to prioritize young people's continuing education and transition to the labor market in order to maximize economic and social integration. The development of this perspective is based on studies to present significant improvements in economic and social outputs as the years of education increase and the transition to the labor market is achieved (Blaug, 1972; Psacharopoulos & Patrinos, 2018). With the adoption of NEET over time, its application domain has expanded as it took into account the development and evaluation of many policies directed at the target group.

2. The Problem of Youth Integration and the Risks of NEET

The main reason why youth and youth integration have become a priority for countries is the fact that this group is of critical importance for sustainable development and the difficulties experienced in the

last 15 years (Amendola, 2022; OECD, 2016a). Indeed, high NEET rates indicate that a large group is not involved in the employment and education process, which contributes significantly to economic and social welfare. The number of NEETs looking for employment and education but not being able to find either, reduces the efficiency of education investment on an individual and a national scale.

The long-term risks posed by the growth of the NEET group are examined in different categories. Firstly, the inability of young individuals to enter the workforce despite their qualifications poses a significant risk (Gadsby, 2019). Prolonging the unemployment process accelerates skill obsolescence, reduces graduate motivation, and may result in quitting job seeking (ETF, 2015; Powell, 2021). Inclusion in the long-term NEET group may result in young individuals being forced to accept jobs that do not align with their skillset, exacerbating skill mismatch and subsequently reducing their earning potential. (World Bank, 2015; Quintini, Martin, & Martin, 2007). Considering that the labor market is rapidly transforming, the longer the period of staying in the NEET group, the more difficult it is to adapt to this transformation. This may lead to the growth of the “passive NEET” group, which is the most difficult subgroup to return to education or employment (Hutchinson, Beck, & Hooley, 2016; Kieselbach, 2003).

The biggest risk of long-term NEET member is the social exclusion of young people who want to continue education or employment. The fragility of individuals who stay away from education, which is a small-scale model of society, and who cannot make economic gains, also increases (Pemberton, 2008; SEU, 2004). Numerous studies have demonstrated that this demographic exhibits lower levels of well-being and a higher likelihood of engaging in negative behaviors when compared to their peers (Garipey et al., 2022). For this reason, the NEET group is considered to be more vulnerable to low income and social exclusion in the long run (World Bank, 2015).

Factors Affecting Inclusion in the NEET Group

The prominence of NEET in determining education, social and economic policies has also increased studies focusing on the factors affecting the inclusion of young people in the NEET group (Holmes, Murphy, & Mayhew, 2019; Filmer-Sankey & McCrone, 2012). The identification of such factors plays a crucial role in pinpointing young individuals who are at a higher risk of being classified as NEET and devising appropriate mechanisms for their support. The results of studies group the factors determining inclusion in the NEET into two clusters as “personal/demographic characteristics” and “school-related characteristics” (Holmes, Murphy, & Mayhew, 2019; Filmer-Sankey & McCrone, 2012).

Personal and demographic characteristics encompass a range of factors such as caring responsibilities, young parenthood, physical or psychological disorders, economic disadvantage, lack of permanent residence, unemployment, insufficient professional skills, and residing in areas with high unemployment. These conditions are known to increase the likelihood of young individuals being classified as NEET. Moreover, existing literature suggests that the probability of NEET status is further exacerbated when an individual experiences multiple such factors simultaneously (Holmes, Murphy, & Mayhew, 2019; Filmer-Sankey & McCrone, 2012). What needs to be emphasized here is that young people often have no control over these personal/demographic characteristics. Therefore, the recommendations highlight policies to encourage education and employment for these groups, recognizing that young people with these personal and demographic characteristics are more likely to be involved in NEET (European Commission, 2018; OECD, 2016a).

School-level indicators are non-participation in education, long-term and chronic absenteeism, low achievement, negative behaviors, and the absence of risk monitoring policies (Holmes, Murphy, & Mayhew, 2019; Filmer-Sankey & McCrone, 2012). As a result, students who are persistently absent, exhibit low academic achievement, and have disciplinary issues are at a higher risk of

being classified as NEET. The absence of policies to address these students' needs has further contributed to the rising NEET rates. Unlike personal and demographic characteristics, school-level factors such as these can be mitigated through appropriate education and social policies. Therefore, the “Global Policies for Reducing NEET Rates” discussed in the following sections were developed mostly to improve school-level indicators.

3. Increase in NEET Rates with Changes in the Labor Market and Effects of the Pandemic

One of the reasons why NEET is on the agenda so frequently all over the world is the economic contraction experienced globally as of 2008 (Görkey, 2020; OECD, 2016a). This shift resulted in a reduction in the demand for labor, while simultaneously leading to a transformation in the nature of such demand. In this period, a global decrease in demand began in almost all sectors, and the spread of digitalization and automation accelerated (OECD, 2016a; Özer & Perc, 2020; Perc, Özer, & Hojnik, 2019). As a result of these, “the most educated youth group in history” has started to face a major integration problem due to economic contraction and transforming labor market demands (OECD, 2016a). According to a 2015 profiling study conducted by the World Bank, the NEET group comprises around 40% of the global unemployed population, with their unemployment rate being four times that of adults (World Bank, 2015).

Another key factor in the higher NEET rates is the “Covid-19 epidemic”, which became a global crisis in 2020 (ILO, 2021). In addition to the estimated \$12 trillion loss (Ajmal, Khan, & Shad, 2021) in the global economy in the last two years, the pandemic has caused many people to experience job losses, a major contraction in the labor market, and employment problems that vary with respect to sectors. According to the results of predictive study conducted by Tamesberger and Bacher (2022), the scale of youth unemployment in the European Union region during the epidemic period increased from 2.8 million to 4.8 million; The NEET group has expanded from 4.7 million to 6.7 million, indicating a worrisome trend. Studies

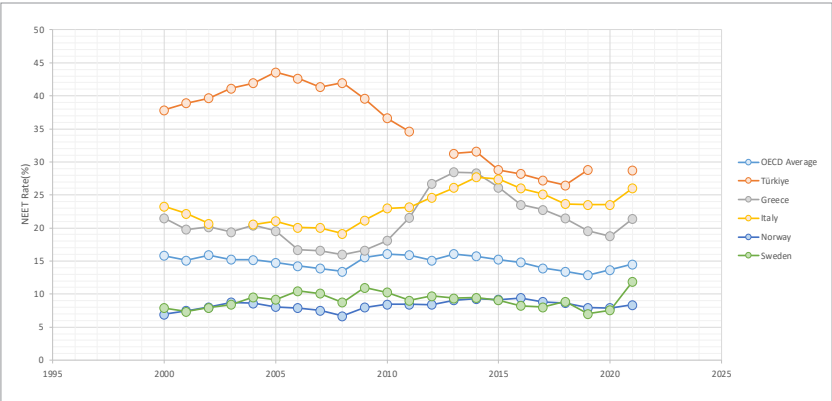
conducted during the pandemic have further revealed that the economic challenges brought forth by the crisis have significantly increased the probability of young individuals being classified as NEET. Additionally, the degree of increase varies among different subgroups (Aina et al., 2021).

4. NEET Rates in the World and Türkiye

The global developments mentioned in the previous sections have caused significant changes in NEET rates over the years. Figure 2 shows the average change in NEET rates in selected OECD countries over the last 20 years.

As seen in Figure 2, NEET rates decreased continuously from 2002 to 2008, but started to increase after 2008 and reached a peak in 2013 and 2014. In this context, the negative effects of the economic contraction experienced after 2008 have become clearly felt among young people. In addition, Figure 2 reveals that as of 2021, NEET rates also show significant differences among OECD countries. For instance, Northern Europe and Continental European countries, especially Norway and Sweden, have relatively low rates. While Türkiye is the country with the highest NEET rates, it is above the OECD average along with Greece and Italy.

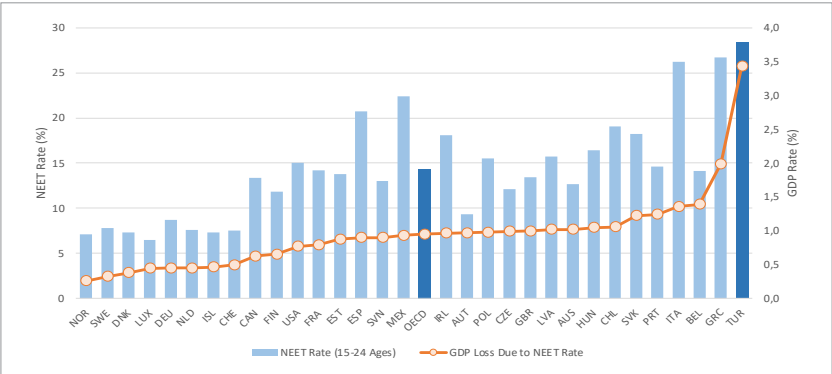
Figure 2: Change in NEET Rates in Selected OECD Countries: 2000-2021 (15-29 Years)



Another point worth mentioning is that high NEET rates have been observed in Türkiye for a long time. As seen in Figure 2, NEET rates in Türkiye have been consistently above the OECD average in the last 20 years, varying between 26.5% and 43.6%. Additionally, Figure 2 reveals that NEET rates in Türkiye decreased by nearly 14% between 2006 and 2018. Even though Türkiye's NEET rate is higher than the OECD average in 2021, a significant reduction has been achieved compared to 20 years ago. In addition, the change in NEET rates in Türkiye differs from the global trend that has increased since 2008. While NEET rates had increased in most of the countries shown in Figure 2 as of 2008 (the increase was more pronounced in Greece and Italy), NEET rates continued to decline in Türkiye. This factor may be attributed to several factors, including the rise in education rates across all levels in Türkiye and sustained growth in the labor market. Finally, while NEET rates tend to rise between 2019 and 2021 in other OECD countries, a partial decrease is observed in Türkiye. Among the reasons for this situation are “Steps Taken by the Ministry of National Education in Türkiye to Alleviate NEET Rates”, which is discussed in the following sections.

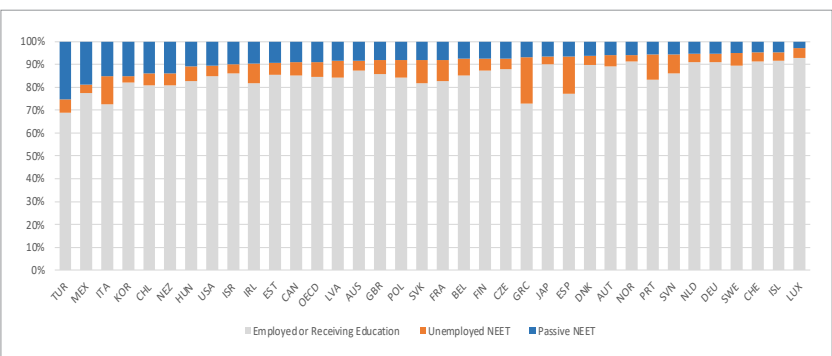
The inability of young people to contribute to development due to their lack of employment or education also causes economic losses on a national scale. A predictive study showed that the economic loss due to NEET corresponds to between 0.9% and 1.5% of the total gross domestic product (GDP) of OECD countries and reached approximately 560 billion dollars (OECD, 2016a). It is also worth noting that Türkiye, which has the highest NEET rate among OECD countries, is evaluated as the country with the greatest loss due to NEET. As shown in Figure 3, the cost of not participating in education and employment for the NEET group in Türkiye is 3.8% of GDP, which is the highest in the OECD (OECD average is about 0.9% of GDP).

Figure 3: NEET Rates and Corresponding GDP Rates in OECD Countries



The OECD study has revealed a notable discovery: Türkiye boasts the highest rate of passive NEETs among OECD countries (OECD, 2016a). As evidenced in Figure 4, the NEET rate of individuals without any education or employment seeking is exceeds 25% in Türkiye, significantly surpassing the OECD average of 9%. Among the closest countries to Türkiye are Mexico, Italy, and Korea, with their respective "passive" NEET rates of 19%, 15%, and 14%.

Figure 4: Unemployed and Passive NEET Rates in OECD Countries



5. Sustaining Global Policies to Alleviate NEET Rates

Mitigating NEET rates is on the policy agenda of many countries, especially the European Union (European Commission, 2020; ILO & SIDA, 2019; Tamesberger & Bacher, 2020). Reducing NEET rates, which has been on an upward trend since 2008, with the Covid-19 pandemic at the end of 2019, has become one of the "2030 Sustainable Development Goals" (ILO & SIDA, 2019). Furthermore in order to compensate for the impact of the pandemic on this large group, the European Commission introduced the "Youth Unemployment Support: Bridge to Jobs for the Next Generation" proposal with a budget of 22 billion Euros in July 2020 (European Commission, 2020; Tamesberger & Bacher, 2020).

Within this framework, global institutions such as the ILO, OECD, and World Bank provide data-driven recommendations. These recommendations and what has been done in line with the recommendations are briefly summarized (European Commission, 2018; ILO, 2015; Mawn et al., 2017; OECD, 2016a).

5.1. How to Reach NEET Group and Track at School

As mentioned in the previous sections, NEET represents a very heterogeneous group of young people. Thus, it is very critical to evaluate in detail the demographic characteristics, socioeconomic and educational backgrounds of young people included in the NEET group in studies at the national level. In this context, the first suggestion is to contact young people to determine their needs and their demands for employment and participation in education (European Commission, 2018; ILO, 2015). Upon reaching the NEET cohort, a range of policies may be implemented to activate these subgroups.

International organizations suggest that interventions in the education process are more effective, and the support provided during the education process is beneficial both in the transition to education and employment (European Commission, 2018; ILO, 2015; OECD, 2016a). Developing mechanisms for continuous

monitoring of students' educational participation and the main achievement indicators is among the proposals. Studies have shown that monitoring mechanisms increase achievement and employment opportunities (Fuchs & Fuchs, 2001; UNICEF, 2019).

Various policies are pursued to incentivize students to pursue further education or seek employment upon graduation. For instance, in the Netherlands, Lithuania, and England, education tracking systems utilize databases from various states and regions to promote these goals (European Commission, 2018). Tracking systems provide administrators with information about students who exceed their absenteeism threshold. The system used in the UK creates a "vulnerability score" for students by using many of the previously mentioned demographic features. A committee consisting of different stakeholders meets every month to discuss interventions for students with high vulnerability scores.

Besides monitoring, another crucial element is vocational guidance. In Austria, participating vocational guidance programs at the primary education level is compulsory. Students participate in this program at 64 career planning centers in the country, and their career orientations are determined according to their interest and achievement levels. In Finland, career guidance is offered to students who have completed secondary school under the Career Start Programme. For young people likely to be included in the NEET group, personal planning and orientation programs lasting between 20 and 40 weeks are available (European Commission, 2018).

Volunteer students in Luxembourg help the local government reach out to students who leave education early. Students reached within the scope of the study called "Local Action for Youth" are provided with personal guidance in various institutions (European Commission, 2018). In the Netherlands, regional coordination centers collect data from schools and directly contact young people leaving education. The centers developed to provide young people with the necessary social assistance collect data about these students

and monitor their participation in education and employment. Within the scope of the Legnano Youth Project in Italy, databases of many public institutions and NGOs were combined to form a common data pool. This common pool has greatly accelerated the identification and outreach of particularly inactive NEETs (European Commission, 2018).

5.2. Raising Awareness

Another recommended step after reaching out to the NEET group is to increase their awareness of education and employment opportunities. The practices of countries are in the form of informing using different media platforms, distributing printed materials, participating in various festivals-fairs and working with groups that are in close contact with young people (European Commission, 2018).

Various social media platforms and computer games, including YouTube, are used in Portugal to provide educational and employment opportunities. A media campaign has been carried out in Slovenia, in which Facebook and mobile applications have been used effectively, to inform the NEET group since 2014. In Sweden, teams of career experts and municipal experts are tasked with finding unemployed youth and informing them about the opportunities available. The local offices (Mission Locales) established in France are meant to identify the needs of young people between 16 and 25 years of age and to offer guidance. More than 1.2 million young people have benefited from 444 offices established in 2013 (European Commission, 2018).

5.3. Providing Multiple Support

Policies aimed at the NEET cohort entail a multifaceted process that involves generating awareness, establishing outreach initiatives, providing training opportunities, and fostering employment prospects to encourage their reintegration into society. Meta-analysis studies suggest that multi-faceted support can reduce the NEET population (Mawn et al., 2017). To put it concretely, although

it is critical to reach the NEET group and inform them about opportunities, the impact has been determined to be extremely limited without employment-oriented programs. Therefore, the education and employment opportunities provided should be directly related to employment (Mawn et al., 2017). However, in this case, significant improvements are made in the transition of NEET groups to education and/or employment.

6. Measures Adopted by the Ministry of National Education to Alleviate NEET Rates in Türkiye

Over the past few years, the Ministry of National Education (MoNE) has taken a comprehensive approach towards the link between education and employment, conducting significant research aimed at mitigating NEET rates. Education policies that emphasize equal opportunity in education, the strengthening of the relationship between VET and the labor market, increasing participation rates in school and supporting disadvantaged students have contributed significantly to lower NEET rates. This section discusses the MoNE policies and their effectiveness in reducing NEET rates.

6.1. Strengthening Apprenticeship Training

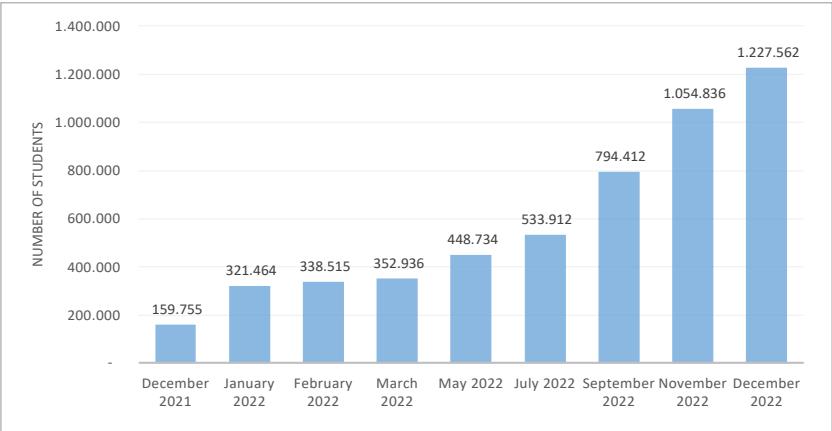
Apprenticeship training has a critical importance in meeting the need for craftspeople and masters in the labor market (Lerman, 2019; Ryan, 1998). Apprenticeship education, conducted at vocational education centers (VTCs), is an immersive form of instruction that empowers students to gain hands-on experience and cultivate professional skills in genuine business settings through application-oriented training sessions (Özer, 2019a, 2019b). The skills acquired directly in the labor market enable students to learn the structure and expectations of the labor market directly. Employers also have more responsibility to ensure that students have the expected skills. This mutual interaction increases the employability of students and contributes to the training of the workforce. In fact, according to a 2019 study conducted by the MoNE, nearly 88% of apprenticeship-trained students secured employment, with approximately 75% of these individuals securing positions within the institutions where

they received on-the-job training (Özer & Suna, 2020). These findings are also consistent with global examples of the high employment rates provided by apprenticeships (Cahuc & Hervein, 2020; ILO, 2012).

By the end of 2021, MoNE started to take concrete steps to strengthen apprenticeship training. The most relevant of these steps is the regulation made in Vocational Education Law No. 3308 at the end of 2021. Within the framework of this regulation, the wages of craftspeople who have successfully completed the 11th grade have been increased from one third of the minimum wage to half. In addition, the wages received by the students during their apprenticeship training began to be covered by the state, and wage responsibility was taken from the employers (Özer, 2022a, 2022b). Social awareness programs were performed to increase the impact of the improvements, and the provincial organizations of the MoNE took an active role in promoting the regulation.

These arrangements made by MoNE have led to a huge increase in the social demand for apprenticeship training. As seen in Figure 4, the number of students receiving apprenticeship training has increased from 159 thousand to over 1 million 200 thousand in a period of approximately one year. This large increase has led to a similar increase in the proportion of apprenticeships in upper-secondary VET education. As a matter of fact, while apprenticeship education constituted approximately 5% of upper-secondary VET education in December 2021, this rate reached approximately 47% a year later. This is significant as it underscores the increasing popularity of apprenticeship education, which boasts an exceptionally high employment rate.

Figure 5: Number of Students Receiving Apprenticeships in Vocational Training Centers: December 2021-2022



6.2. Vocational Skills for Young Adults

As mentioned in the previous section, the generally accepted age range of the NEET group falls between 15 to 24 and 15 to 29 years. This range also includes young adults who have completed compulsory education in Türkiye. Therefore, policies to mitigate NEET rates need to be structured to include young adults. MoNE has recently taken several steps to emphasize the development of skills among adults, which is discussed further in this section.

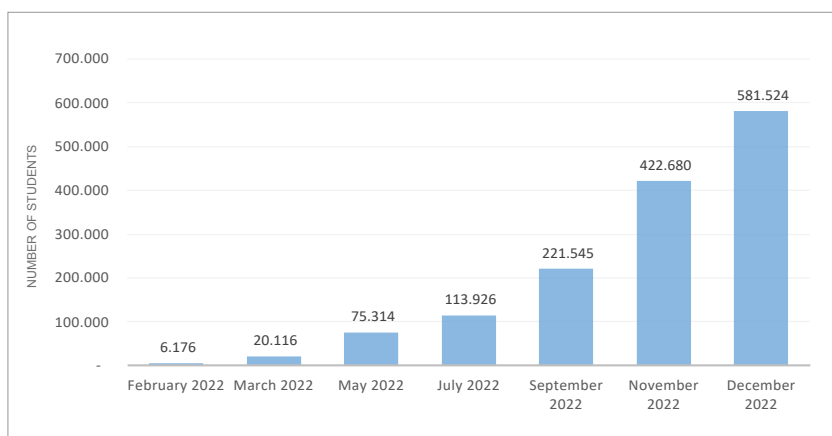
6.2.1. Vocational Training Center Skill Development Program

One of the key steps taken by MoNE to encourage the vocational education of adults is the Vocational Education Center (VTC) Skill Development Programs. The aim is to utilize the adaptable and career-driven nature of apprenticeship education in the vocational training of adults. For this purpose, adults are provided with vocational skills through short-term courses lasting 6 to 8 months. The only condition for participation in the program is secondary school graduation, which also increases the inclusiveness of the program. Therefore, this program is a mechanism by which young

adults in the NEET group can acquire skills in their fields of interest and increase their employability.

The program's employment-oriented and short-term focus has led to high demand among adults in a short period of time. As seen in Figure 6, the number of participants in the program announced in February 2022 increased rapidly and reached over 580,000 by the end of the year. This huge demand also clearly demonstrates the need for adult skill development mechanisms.

Figure 6: Number of Students Participating in the Vocational Training Center Skill Development Program: February-December 2022



An exemplary feature of the VTC Skill Development Program is the even distribution of demand among adults of different genders and educational levels. A study conducted on the participation data in the first four months of the program revealed that the majority of the participants, who were largely within the 18-26 age range, were either classified as NEET or were in close proximity to this group. (Özer & Suna, 2022). Another striking finding in the same study is that 42% of the participants were women, and gender balance was largely achieved in different age groups. The VTC Skill Development

program has the highest gender balance among vocational training programs in terms of female participant rates (Özer & Suna, 2022). Thus, the VTC Skill Development program also contributes to alleviating the relatively high rates of female NEETs.

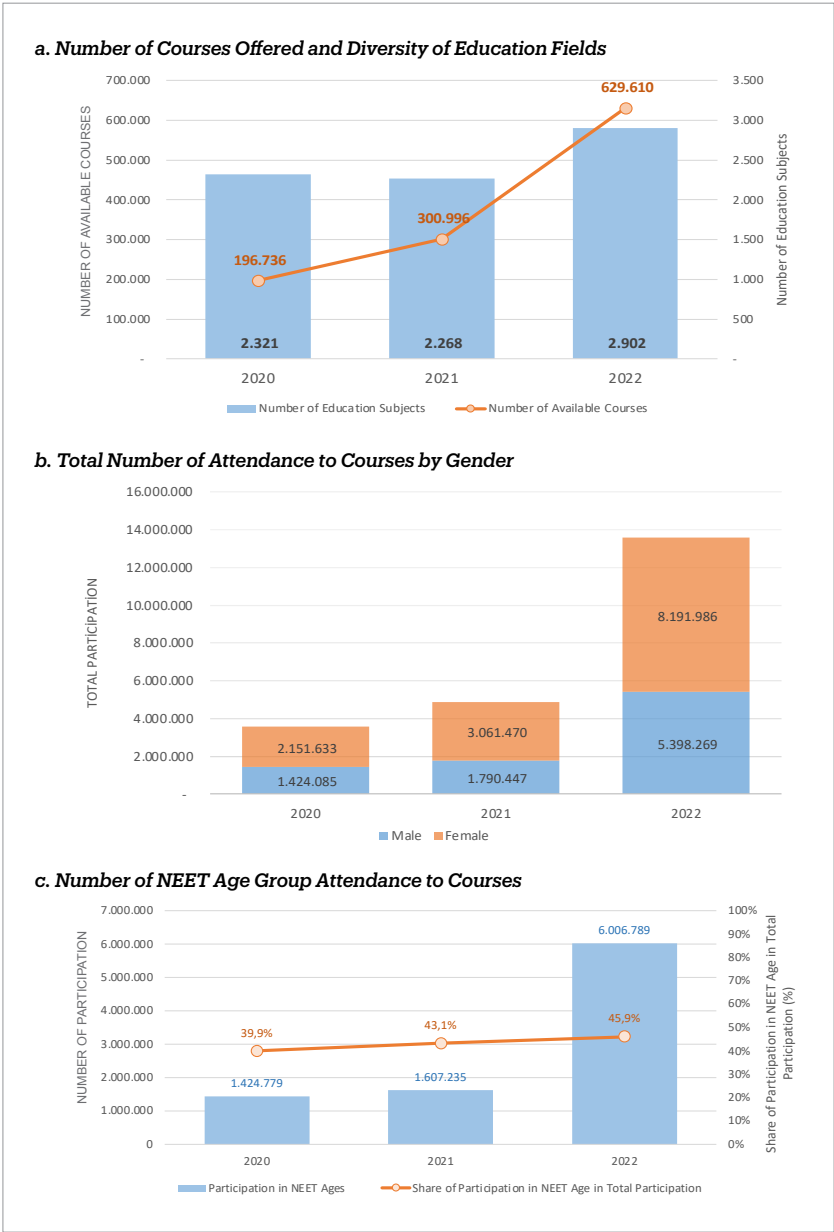
Another key contribution of the program is the participation of adults of different education levels. The aforementioned study indicate that approximately 19% of the participants in the first four months graduated from higher education programs. In addition, gender balance was preserved and even increased in this group. In summary, the VTC Skill Development program soon became a mechanism that the NEET group effectively used, providing gender balance and diversity in education levels.

6.2.2. Public Education Courses

Public education courses have been the main source of education within the scope of lifelong learning in Türkiye for many years. Although institutions and adult education courses have traditionally provided ample resources for skills development, studies have shown that adults in Türkiye tend to make limited use of these opportunities for lifelong learning. (Eurydice, 2021; OECD, 2016b; Özer & Suna, 2022). Moreover, international large-scale studies, especially PIAAC and PISA, show that there is an extensive development area in adult skills in Türkiye (Eurydice, 2021; OECD, 2016b).

In 2021, MoNE prioritized enhancing the accessibility and quality of Public Education Courses by taking into account the feedback of adult learners and upgrading the facilities of public education centers (PBCs). Provincial and district organizations play an active role in promoting popular courses for adults. Figure 7 shows the number of courses opened in Türkiye in the last three years, the variety of courses and the change in total participation.

Figure 7: Increase in Participation and Inclusivity of Public Education Courses: 2020 to 2022



According to Figure 7, there has been a significant increase in the number and variety of public education courses, particularly in 2022. This can be attributed to MoNE's increased consideration of adults' feedback and efforts to improve the infrastructure of public education centers. As a result, more adults are participating in these courses. The increase in participation marks a major step forward for the Turkish government's development in adult education, as highlighted by the OECD and Eurydice. Another factor that Figure 6 reveals is the increase in rates of adults in the NEET age group in 2022. While 39.9% of the total participants were in the NEET age group in 2020, this rate increased to 45.9% in 2022. Moreover, while the total participation in the courses has been increased, the high female representation in previous years has continued to be ensured. In other words, the rate of females in PECs in the last three years is relatively high and is over 60%. The skills acquired in the courses therefore have the potential to contribute to closing the large gender gap in the current NEET rates.

6.2.3. Family School Program

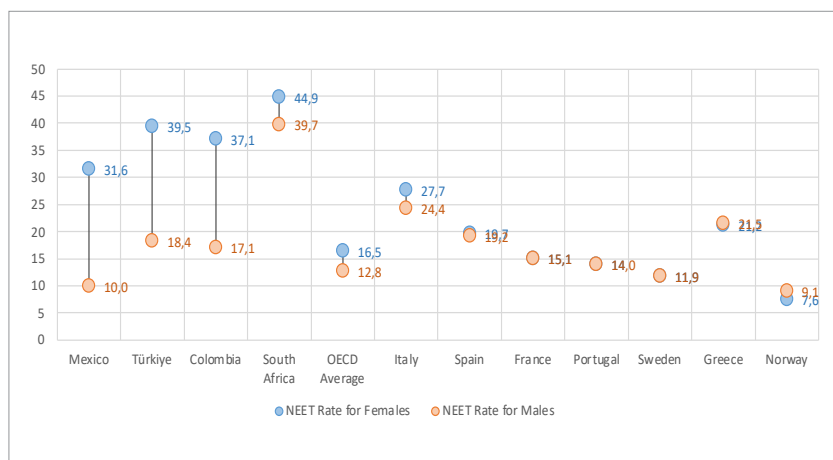
As stated in the previous sections, one of the most effective factors for young people to enter the NEET group is the education level of their families (Holmes, Murphy, & Mayhew, 2019; Filmer-Sankey & McCrone, 2012). In concrete terms, children with a low parental education level are more likely to be in the NEET group after graduation. Thus, family education is an influential factor in children's education or transition to employment, as well as ensuring equal academic opportunities. MoNE launched the "Family School" project in 2022, which offers free education to families in various fields, including literacy skills, communication skills, digital skills, stress management, first aid, and environmental awareness. This program aims to provide families with the necessary skills and knowledge to improve their lives and well-being.

The aim of the project is to increase the interest of families in their children's education while improving their skills through participation in education. Research has shown that children tend to have a more positive attitude towards education when they grow up in a family environment that values and actively participates in education. (Lara & Saracosti, 2019; Topor et al., 2010). In this context, empowering each family member through education supports children's participation in education and employment. By reaching approximately 1 million families in four months, MoNE has effectively expanded its program.

6.3. Dissemination of Early Childhood Education

Gender disparities are prevalent in NEET rates across many countries, including OECD countries, where females typically have higher rates than males. This is partly due to the disproportionate burden of child and family care responsibilities that fall on women, as illustrated in Figure 8. In addition, cultural norms and especially the fact that males are more dominant in the demand for transition to employment may also lead to gender gaps.

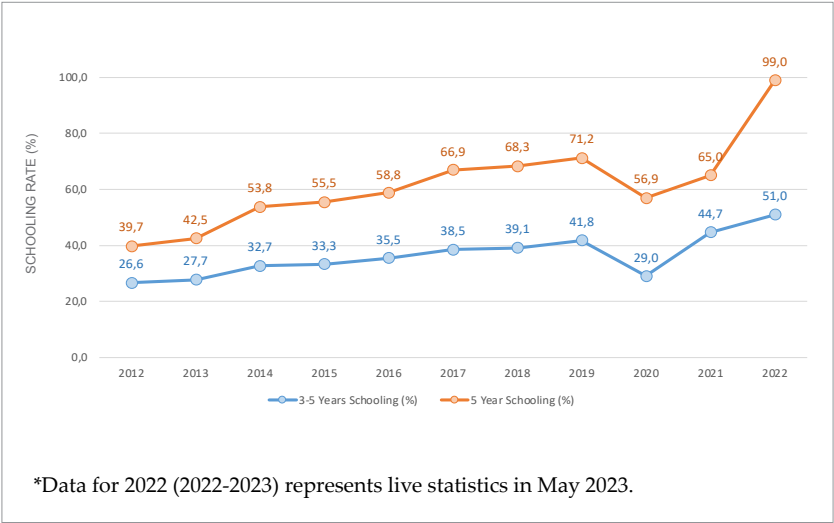
Figure 8: NEET Rates by Gender in Selected OECD Countries



Early childhood education (ECE) is extremely helpful for parents with young children who want to pursue education or employment, as it provides them with essential support in balancing family responsibilities with personal aspirations. As it is known, ECE makes a substantial contribution to preparing children for school life and gaining self-care skills (Suna & Özer, 2022). In addition, students participating ECE leads to longer education engagement, greater academic success, and higher rates of employment transition (Cortazar et al., 2020; McCoy et al., 2017). ECE offers education and employment opportunities for both students and their families - especially young mothers.

Starting in 2021, MoNE ensured the dissemination of early childhood education throughout Türkiye. In just 1.5 years, Türkiye was able to develop a capacity of 6,004 new kindergartens, tripling the total number from 2,782. This has led to a significant increase in enrollment rates, as shown in Figure 9.

Figure 9: Changes in Schooling Rates in Early Childhood Education in Türkiye



MoNE provides financial support to disadvantaged students to increase access while building the necessary capacity to expand pre-school education. With annual funding of ₺ 500 million, disadvantaged students' access to pre-school education is supported. Thus, MoNE has taken an active step to overcome economic limitations, which are seen as the biggest obstacle to participation in ECE globally.

6.4. Early Warning and Tracking System to Reduce School Dropouts

Another determining factor for young people to enter the NEET group is early school leaving and high absenteeism (Holmes, Murphy, & Mayhew, 2019; Filmer-Sankey & McCrone, 2012). In other words, early school leavers and young people who are constantly absent during the education period are more likely to enter the NEET group. Early school leaving is mostly associated with children's home responsibilities and rapid entry into the labor market, and brings with it significant problems in the long run. Children who leave school prematurely do not acquire the skills sufficiently and are mostly face with limited choices on the labor market.

MoNE took an effective step in 2023 to minimize early school leaving and increase access to education. With this step, students who do not to attend school for various reasons are reached individually through local district organizations. Provincial and district organizations of MoNE have the opportunity to reach these students at their residences by using the Central Population Administration System (MERNIS). To further address the issue of high absenteeism among students, e-School is used to identify students who are frequently absent despite continuing their education. This information is then shared with the relevant provincial and district organizations for appropriate action. This proactive approach towards identifying and supporting at-risk students ensures that dropouts are prevented even before they occur. With this step, it is possible to increase primary school enrollment rates, which have already risen to 99% for the first time, and secondary school enrollment rates,

which have reached over 95% (Özer, 2022b), and dropouts due to marginalization are reduced. The system also produced its first outputs in a short period of time. In January 2023, the schooling rate in secondary education increased from 95.06% to 95.97% in just one month. With over 6 million students in secondary education, the rapid improvement in preventing dropouts has significant potential to increase participation rates.

6.5. Summer School and Academic Support Programs

Academic and social support is also extremely critical to cope with the negative effects of Covid-19 pandemic on students. As it is known, the this period brought many problems such as learning losses, decrease in well-being and life satisfaction, and disruption of school routine (Özer et al., 2020). As mentioned in the previous sections, the pandemic also caused the NEET group to grow. In many countries, especially European countries, practices such as providing remedial education outside of school hours, extending the course period, and expanding academic support programs are carried out in order to compensate for these shortcomings (UNESCO, UNICEF, World Bank, World Food Program, & UNHR, 2021).

In a significant move to combat the effects of the pandemic and reduce NEET rates, MoNE launched the Summer School Program in 2022. The free summer school program for public school students, aimed at reducing both the NEET rate and the negative impact of the pandemic. This innovative program effectively utilized the extensive resources of Science and Art Centers (BİLSEM), reaching approximately 1 million students across various fields, including art, mathematics, Turkish, and foreign languages.

Another step taken for the same purpose is to expand the scope of Remedial Education & Support Programme in Primary Education (İYEP) and Support and Training Courses (DYK), which have been implemented for years and have become the support programs of MoNE. Since 2021, the target group of İYEP has been shifted from

4th grade to 3rd grade, enabling earlier identification of learning deficiencies." Along with the grade levels applied to the DYK program, the number of courses within the scope of DYK has been increased. Its purpose is to increase the effectiveness of programs designed to compensate for learning deficiencies and provide academic support to students.

6.6. Enabling Vocational Education in the Integration of Migrant Students

Studies on the NEET group show that immigrants are more likely to enter the NEET group due to the socioeconomic disadvantages and integration problems (Holmes, Murphy, & Mayhew, 2019; Filmer-Sankey & McCrone, 2012). Increasing migration movements on a global scale also increase the importance of policies regarding the education of immigrants and their transition to employment. In other words, the responsibility of education systems is growing for the rising number of immigrants to receive a qualified education and to find a place on the labor market.

When global policies applied to the education of immigrants and their transition to the labor market are examined, it is seen that VET comes to the fore (Joel, 2019). As practical skills and language skills are less decisive in learning, VET provides substantial opportunities for immigrant students (Joel, 2019; Özer, Suna, & Numanoglu, 2021). On the other hand, recognition of the vocational skills that immigrant students are likely to have is among the advantages of VET. Especially in continental European countries, many projects are implemented to promote the transition to vocational training for immigrants (Joel, 2019).

Türkiye has become one of the countries hosting the highest number of immigrants in the 11 years after the Syrian civil war that started in 2011. As of 2022, it hosts 3.6 million Syrian refugees, of which approximately 1 million are of school age. In addition to the PICTES program, which has been implemented for many years for the education of immigrants, MoNE has been using VET more

effectively since 2020. The SEUP project, which encourages the transition of immigrants to upper-secondary VET, and especially the IMEP projects, which support the transition to apprenticeship education, have started to be implemented. In the last two years, 68 thousand students participated in the SEUP project and more than 9 thousand students participated in the IMEP project (Özer, 2022b).

7. Overview

The decisions made by young people after completing their compulsory education have a significant impact on the future of their nations. As a result of studies intensified in the 1990s, the orientation of young people towards education and employment is seen as a way to grow their individual earnings and increase their social integration. Furthermore, countries are also focusing on creating opportunities for young people who do not pursue education or employment (NEET) due to personal or environmental reasons, and providing them with options to choose from based on their preferences. The reason why countries place such great importance on the NEET population is the rapid decline in employment opportunities for young people who have been out of education or employment for an extended period. Rapidly transforming technology makes the labor market more demanding, and competition among individuals increases in most economies. As a result of the universalization of education, young people become more selective in terms of employment and may experience the negative effects of being in the NEET group for a long time. Furthermore, the fact that these young people are more likely to experience physical and psychological problems and even social exclusion contributes to the development of policies for these young people.

Despite a notable decrease from the 40% NEET rates of the early 2000s, Türkiye still has one of the highest NEET rates among both EU and OECD countries, with the 15-29 age group currently hovering around 30%. It is also worth noting that Türkiye has one of the highest youth ratios among EU and OECD countries. The modeling

studies have demonstrated that even after 60 years, Türkiye will remain one of the youngest societies, emphasizing the importance of the education and employment policies for the country's young population in yielding long-term benefits.

The cultural norms in Türkiye may also play a role in the current NEET rates, as a significant proportion of the NEET group is in a "passive" position, and there is a large difference between male and female NEET rates. Thus, it is likely that some individuals in the NEET group did not voluntarily choose to pursue education or employment. Nevertheless, it is critical to create the necessary opportunities for young people who want to pursue education or employment within the NEET group. After the Covid-19, additional difficulties have arisen, especially in the transition of young people to employment.

In recent years, MoNE has been following policies that enable the education system to establish stronger relations with the labor market while supporting the skills of students. Strengthening apprenticeship training, implementing vocational training center skill development programs that young adults and enriching lifelong learning activities are concrete examples of employment-oriented skills training programs for the NEET group. In this context, MoNE has started to implement support programs similar to the vocational skills programs for youth and adults (Özer & Suna, 2022) offered in Greece, Norway, Romania, England and Sweden.

As emphasized by international institutions, raising social awareness is as significant as developing these programs. Through the work of provincial and district organizations, effective use of social media and digital platforms was ensured by MoNE to promote the aforementioned programs to target groups. These steps serve the same purpose as the teams and offices used in France and Slovenia to reach NEET groups. Similar to the use of different digital platforms and areas in Portugal, young adults are reached through MoNE's online accounts and "My Profession is My Life" platforms.

Research suggests that effective results can be achieved through steps taken in the education process to guide young people towards education and employment, especially when monitoring mechanisms are established. In January 2023, MoNE implemented a monitoring system that made it possible to reach all out-of-school students, resulting in a significant increase in secondary education enrollment from 95% to 96% in a short period of time. The use of this system provides important opportunities to prevent early school leaving, one of the most important determinants of being included in the NEET group and to inform young people out of school about available opportunities.

In order to support the orientation of all students towards education or employment, MoNE increased the scope of academic support programs and implemented the free summer school program for the first time. In addition, it started to implement the “Family School” project in order to increase the education level and participation of families in education. It is essential that these steps are taken to encourage disadvantaged students who are more likely to belong to the NEET group to pursue education or employment.

A distinguishing feature of initiatives by MoNE is that they are not targeted at a single stakeholder, region or group. As demonstrated in the study by Mawn et al. (2017), NEET group orientation to education or employment can be maximized with multidimensional support. Therefore, to obtain concrete results from policies for the NEET group, programs suitable for the target group must go hand-in-hand with informing and monitoring the group. The number of participants in the study also indicates that the NEET age group is informed about the programs in question and has a high demand. The continuation of these policies with the support of stakeholders from the public and private sectors has the potential to contribute significantly to the gradual alleviating of NEET rates.

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THE INTELLECTUAL PROPERTY RIGHTS IN THE NATIONAL TECHNOLOGY INITIATIVE: RECENT EDUCATIONAL IMPROVEMENTS IN TÜRKİYE*

*Özer, M., & Suna, H. E. (2022). The intellectual property and industrial rights in the national technology initiative: Recent educational improvements in Türkiye. In M. A. Kacı, M. Şeker, M. Doğrul (Eds). National technology initiative: Social reflections and Türkiye's future, (pp. 61-80). Turkish Academy of Sciences.

In the 1990s, the production and service sectors experienced a major transformation (deCock Buning, 2016). Particularly, routine work in the production and service sectors was gradually undertaken by machines (Acemoğlu & Restrepo 2018; Dauth et al., 2019). After the 2000s, traditional production was replaced with intangible production (Coombe & Turcotte, 2012). The extension of automation and artificial intelligence (AI) technologies in diverse sectors has accelerated this transformation (Özer & Perc, 2020; Perc, Özer & Hojnik, 2019).

The transition from tangible to intangible products led to important challenges in determining the ownership of the productions (de Cock Buning, 2016). While it is comparatively easy to determine the features of tangible products, it has become difficult to determine these features in intangible products. Today, when productions become more abstract, claiming ownership of the products has become more challenging (Moerman & Van derLaan, 2006).

New production technologies pave the way for smoother, error-free, and faster outcomes. AI took the production process to a whole new level. These technologies promise to extend the capacity of machines and their role in the business world (Charalambous et al., 2019). Before AI, machines were used to perform predefined tasks, while these technologies enable machines to “learn” (European Parliament, 2020). Although machine learning is quite different from human learning, it still leads to a new era for machines. Because the ability of machines to learn leads to conducting more complex tasks such as decision-making, risk prediction, and process improvement (Lauritsen et al., 2021; Nakashima, 1999). In this context, AI and automation brought revolutionary features to the labor market and the results become disputable.

The revolutionary characteristics of automation and AI characteristics create challenges alongside their benefits. The first result is the employment issues experienced by the employees responsible for routine work (Acemoğlu & Restrepo 2018; Dauth

et al., 2019). According to a recent study by the World Economic Forum (Future Jobs-2020 Report), 85 million jobs in 26 countries will be taken over by automation and AI by 2025, while 97 million new jobs will be generated (World Economic Forum, 2020). The fact that these jobs are taken over by machines day by day, the employability of a large employee group of people with conventional skills will decrease. On the other hand, this transformation leads to new employment opportunities based on new skills (Kande & Sönmez, 2020). Consequently, increasing the employability of this employee group by reskilling and upskilling becomes an important priority.

The second result of automation and AI transformation is the change in the skills needed by the labor market (Lane & Saint-Martin, 2021; Morgan et al., 2019; Webb, 2020). The fact that machines can do routine work faster and more precisely creates the need for a change of skills. The labor market now prioritizes general cognitive skills, social-emotional skills, and digital skills (Acosta & Muller, 2018; Pichler & Stehrer, 2021; TÜSİAD, 2019). This change is extremely important for meeting the labor markets' needs on a global scale.

In this study, we discussed the steps taken by the Ministry of National Education (MoNE) in recent years to develop intellectual properties and how these steps contribute to the Turkish National Technology Initiative.

1. Intellectual Property and Education

General cognitive skills are important for reasoning, and basic verbal and numerical literacy (Sum, 1999). Raising students with general cognitive skills is vital for raising a society that questions, finds solutions to problems, and improves the process. Social and emotional skills (SES) are essential for raising individuals with adequate self-regulation and empathy, collaboration, and social responsibilities (MEB, 2021; OECD, 2021). On the other hand, acquiring students' digital skills is considered a requirement in the digitized world. People work in a world that becomes more and

more digital every day, and the role of digital skills is becoming critical (Feijao et al., 2021). Therefore, students need to acquire digital skills for employability in the labor market.

Since education is the key to raising human resources, the quality of education is critical for technological transformation. Thus, most education systems are undergoing major revisions to cope and adapt to the changing demands of the labor market (OECD, 2015; Pastore, 2018). The major step in these revisions is to acquire students with demanding skills in the labor market (OECD, 2015). However, the transformation of the education systems in such a way requires significant time and effort. In this context, the results of the transformation depend on the concurrent improvement of curricula, training programs, and teacher training with infrastructure improvements.

The second is Intellectual Property Rights (IPR) training and policies for raising awareness of IPR (Japan Patent Office, 2018; WIPO, 2016). Different approaches are followed for the teaching of IPR globally (WIPO, 2016). For example, Japan is an important reference; The acquisitions of IPR and industrial rights are graded and embedded in education programs from primary school to higher education (Japan Patent Office, 2018). At the primary school level, the foundational concepts of IPR are taught to students in a concrete way. Then, more detailed information is provided such as the importance of IPR, the ways of their use, and the legal basis at further levels (Japan Patent Office, 2018).

The third is to ensure that both tangible and intangible productions are evaluated in the context of IPR within the scope of education. These practices are effective when students learn the skills by practice. In these cases, students understand better that the products they created can be officially registered, and commercially profitable.

2. Development of Intellectual Property Rights

IPR is among the most important resources that countries can use in recent technological transformations. IPR is expressed as “any kind of product developed with the human mind that is original, innovative and can create value in the labor market,” (Van Dusen, 2013). Therefore, IPR is a comprehensive concept including diverse elements; an idea, invention, substance, software, patent, etc. (Van Dusen, 2013). This flexibility of the IPR framework is a necessity rather than a choice since the innovative features require cognitive flexibility.

Protecting and expanding the IPR is one of the most important factors for economic growth in the competitive global market (Tinao et al., 2019). Today, developed countries attach more importance and allocate more budget to IPR. Additionally, it is shown that many developing and underdeveloped countries lack a systematic- and effective IPR approach (Daley, 2014). Therefore, IPR practices are significantly related to economic growth and competitiveness in the global market.

It is not a coincidence that developed and developing countries pay more attention to IPR. As emphasized earlier, the machine takes over a considerable share of jobs in the labor market and limits the value of routine jobs. The spread and globalization of information enable faster production (World Economic Forum, 2017). In this context, the demanded products in most countries can be produced much faster (World Economic Forum, 2017). The new tools including three-dimensional printers can customize the products with personal preferences (de Cock Buning, 2016).

IPR is important in protecting the rights of people who make a difference with their ideas and approaches. Today, it has become a standard to protect IPR to claim rights to innovative ideas and to gain financial profit. Today, IPR is delivered through various types such as patents, utility models, trademarks, and models (WIPO,

2022). No matter how innovative or unique, a claim on a product that is not defined as IPR has no legal basis. Therefore, acquiring the IPR is as important as innovative solutions and original products. The results of the increase in the importance of IPR since the 2000s are given in Figure 1.

Figure 1: Approximate Number of Global Patent Applications between 2000 and 2020 (World Bank and WIPO)

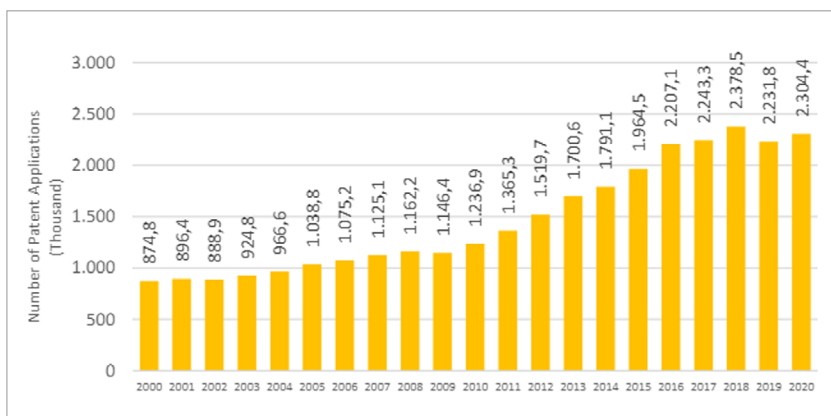


Figure 1 indicates that the number of patent applications has increased drastically in the last 20 years. While the total number of patent applications was almost 874 thousand in 2000, it reached approximately 2.3 million in 2020. Moreover, they remained at almost the same level during the Covid-19 pandemic period between 2019 and 2020. The fact that patent applications have more than doubled in the last 20 years, provides important insight into the importance attributed to IPR along with technological transformations. In Figure 2, the change in the number of utility model applications in the last 20 years is given.

As seen in Figure 2, utility model applications have increased globally in the last 20 years. The number of applications, which was at the level of 162 thousand at the beginning of the 2000s, increased approximately 20 times to approximately 3 million in 2020. Similar

to patent applications, utility model applications were not affected by the negative consequences of the pandemic. In this context, the large increases in the number of both patent and utility model applications reveal the increase in effort and importance of IPR.

Both Figure 1 and Figure 2 indicate that the global interest towards IPR has increased remarkably. Additionally, the IPR outputs of countries differ significantly. Figure 3 shows the change in the number of patent applications across countries in the last 20 years.

Figure 2: Approximate Number of Utility Global Model Applications between 2000 and 2020

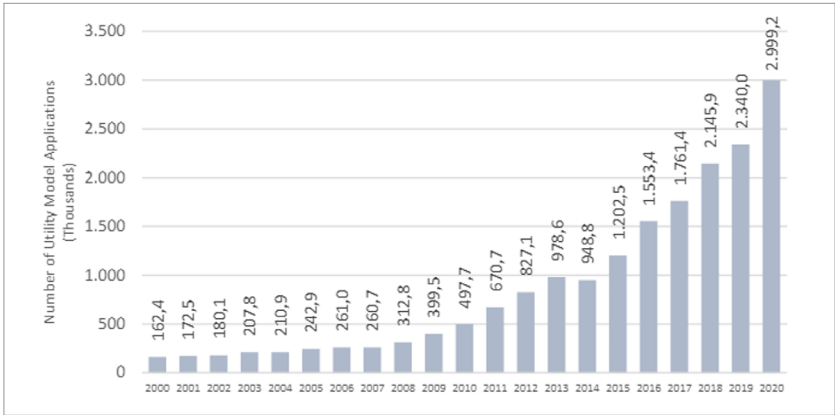
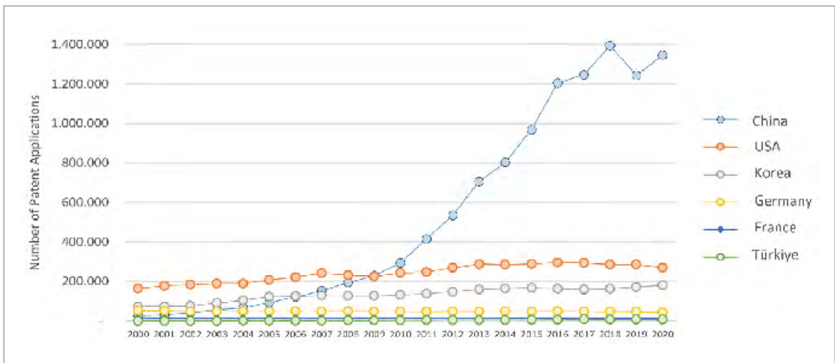
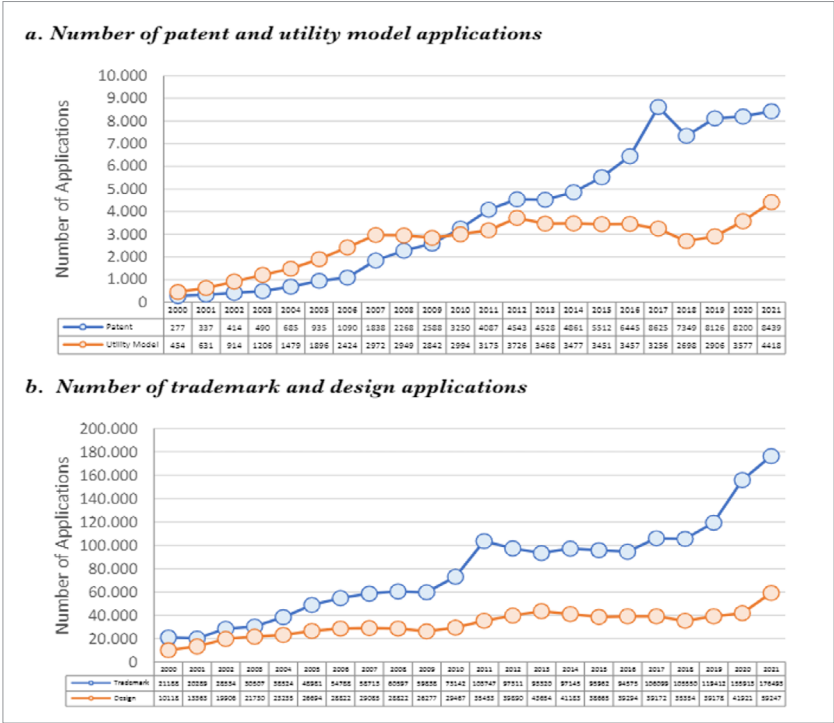


Figure 3: Approximate Number of Patent Applications across Countries between 2000 and 2020 (WIPO)



As seen in Figure 3, the number of patent applications in developed countries usually increased in the last 20 years. However, the increase in China is incomparably greater than in any other country. While the total number of applications in China was around 25k in 2000, it increased 50 times and reached over 1.344k by 2020. In other words, one of almost every two patent applications was made by China in 2020. In the same period, the number of applications increased from approximately 165k to 270k in the USA, and from 73k to 180k in the Korean Republic. Contrary to these improvements, the number of patent applications in Germany and France in Europe has remained at a similar level in the last 20 years and has partially decreased in recent years. Türkiye’s performance over the years in terms of intellectual property products is also given in Figure 4.

Figure 4: IPR Applications in Türkiye between 2000 and 2021 (Turkish Patent & Trademark Office)



As seen in Figure 4, the number of applications for IPR products in Türkiye has increased significantly since 2000. In particular, the number of patent applications has reached 8.4k from below 500, and the number of utility models is over 4k. The number of trademark and design applications in the last 20 years indicates a similar improvement. Although these improvements in Figure 4 show that efforts and awareness toward IPR have increased, the recent number of applications in Türkiye is significantly lower than in the countries in Figure 3. Figure 5 shows the variation of IPR products by income levels of the countries.

Figure 5: Applications for IPR in Countries with Different Income Levels (WIPO)

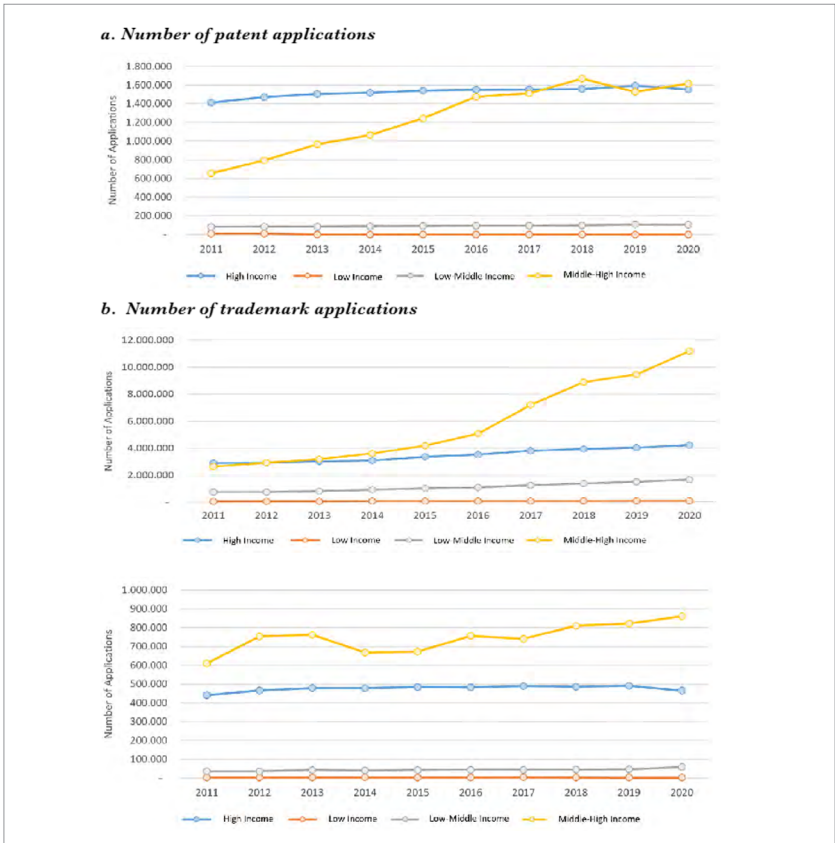


Figure 5 indicates the major differences between the number of applications for patents, trademarks, and industrial design according to the income level of the countries in the last 10 years. Middle-high-income countries have a remarkably higher number of applications than other countries, particularly in patent and industrial design applications. It is also worth noting that middle-high income countries catch up with high-income countries over time and even surpass them in recent years. Today, the fact that intangible productions are becoming more important may cause the income gap between countries to deepen over time. In this context, it is extremely important to increase IPR outcomes, which have increased significantly in the last 20 years in Türkiye. However, the IPR performance of Türkiye is still below than adequate level to be competitive on a global scale.

3. The Recent Steps for IPR Improvement in the Turkish Education System

In this section, we discussed the steps by the Ministry of National Education (MoNE), and their outcomes in IPR are briefly discussed.

3.1. Increasing the Quality of Production in Vocational Education and Including Intellectual Property

The Turkish vocational education and training (VET) system has undergone a transformation process in recent years (Özer, 2019a, 2019b, 2020a). This transformation aims to contribute to national economic development by training the human capital needed by the labor market and minimizing skill mismatches (Özer, 2020b). One of the main purposes of this improvement is to ensure that the productions of VET not only meet the national needs but also extend IPR awareness and culture.

The foundational improvement in the VET system is to promote both public and private sector representatives to comprehensively contribute to the system (Özer, 2020b; Özer and Suna, 2020a). In this context, the extent and coverage of collaborations with sectors have been increased. It is essential for competitiveness in terms of

the use of modern technologies and methods in VET. Within the scope of the cooperation, the infrastructures of VET institutions have been improved, on-the-job training has been provided in work environments, and teacher training has been performed by sector experts. These improvements are critical for increasing the quality of production and teachers' professional development. The transfer of the sectors' experience to our institutions strengthens the production capacity and innovative approaches in the VET system.

Improvements in the production capacity of VET institutions are important for encouraging students' practical skills and IPR outcomes. In recent years, MoNE has made significant investments to increase the production capacity of VET institutions, and it led to a significant rise in revolving funds (Özer, 2021a). Revolving fund income, which was approximately ₺ 249 million in 2018, reaching approximately ₺ 392 million in 2019, ₺ 503 million in 2020, and ₺ 1 billion 162 million in 2021. In the first nine months of 2022, the revolving funds of vocational education institutions reached almost ₺ 1,4 billion. In other words, the income and production capacity of the revolving fund in the VET system has increased approximately six times in just three years.

The outcomes of the increase in the VET production capacity were experienced during the Covid-19 pandemic (Özer, 2020c, 2020d). In this period, VET institutions have become the major producers in meeting Türkiye's urgent needs: masks, face shields, aprons, disinfectants, and disposable medical materials. The flexibility and production capacity of VET institutions contributed to the changing role of these institutions. Most VET institutions producing related materials have been transformed in a short time to produce these urgent materials. Also, selected VET institutions were supported further for innovative productions such as remote-controlled respirators, N95 mask machines, air sterilization machines, contactless thermometers, video laryngoscopes, intensive care beds, and sampling units. Thus, the mask and disinfectant needs of more

than fifty-four thousand educational institutions were met by VET institutions. Additionally, local demands from external institutions were also met by VET institutions. Therefore, the urgent production demand in COVID-19 has accelerated the production in VET to a further level. During the pandemic, VET institutions started exporting their products for the first time in history. These developments have contributed to prioritizing IPR by increasing production quality and international competitiveness.

Another improvement in the VET system is the revision of training programs and reorganization of the vocational fields based on the labor market needs (Canbal et al., 2020). This step is important for students to use timely content and materials in the learning process, and new production and service methods. The share of general cognitive skills, digital and information and communications technology (ICT) skills and practical learning were increased in VET programs (Canbal et al., 2020). The purpose of the update is prioritizing learning via production and acquire students with up-to-date practical and digital skills. These improvements also contribute to increasing the quality of productions in VET institutions, introducing innovative approaches and increasing digital competencies. Therefore, improvements made will contribute to productions such as patents, utility models, trademark and design registration, and geographical exploration, on which ownership can be claimed.

Starting the R&D era in VET and establishing the “Intellectual Property Office” is other important steps taken within the scope of IPR. The number of R&D centers increased remarkably in less than two years and reached 55 in 2022. These centers have been converted from the VET high schools with adequate infrastructure, human resources, related vocational fields, and production capacity. The purpose of these centers is to increase the quality of production, to design and produce innovative products, and to set a model for other VET institutions. In a relatively time, approximately ₺ 25 million has been invested in improving the infrastructures and educational environments of the centers, the number of which has reached 55 by 2022.

The Intellectual Property Office was established in order to coordinate IPR development and tracking in R&D centers and VET institutions to provide IPR trainings. Developing a mechanism to monitor the process within MoNE for IPR is important for evaluating the current potential and even improving it. With the establishment of the office, MoNE ensured that the awareness of educational institutions and collective effort would increase in VET institutions.

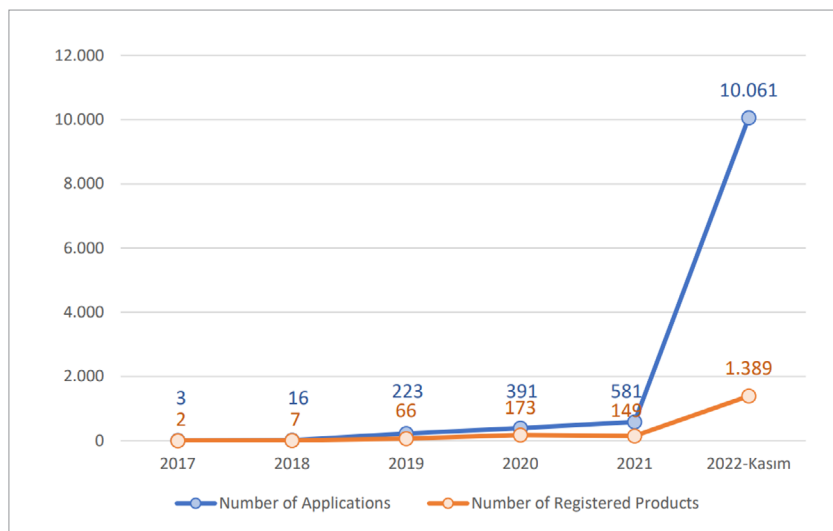
The “1.000 Schools Project in Vocational Education and Training” is among the steps for promoting IPR in VET. For the first time, this project puts the school at the center and provides support in multiple aspects to all education stakeholders. A major feature of the project is prioritizing the VET institutions which need support in Türkiye (Özer, 2021c). Within the scope of the project, selected schools were supported with infrastructural aspects, with intense teacher training, remedial education for students, and improved parents’ educational options. In particular, extensive trainings on IPR are included in teachers’ professional development. The participation has increased to 40 thousand in IPR trainings, which were performed online and face-to-face. The project contributed to the awareness and skills of teachers working in disadvantaged schools, and students were provided with IPR skills with better opportunities.

The holistic effort in the VET system to improve IPR from infrastructure support to raising awareness projects and the establishment of R&D centers, lead to a significant improvement in the IPR outputs in a short time. Figure 6 indicates IPR applications and registration numbers by VET institutions between 2017 and November 2022 in Türkiye.

As seen in Figure 6, the number of IPR applications and registrations from VET institutions has increased significantly from 2017 to 2022. While the number of applications in 2017 was below 5k, it peaked in 2022 at more than 10k. The number of registered IPR products also reached 1,4k. It is important to note that the total number of applications in 2022 exceeded to total number of applications in the

last five years. This indicates that solid outcomes may be achieved cumulatively when holistic improvement is maintained.

Figure 6: Number of Applications and Registered IPR Products by Vocational Education Institutions between 2017 and 2022



3.2. Increasing the Production Quality in Science and Art Centers with IPR Awareness

Science and Art Centers (BILSEMs) are educational institutions in Türkiye that support gifted and highly talented students, and students are selected for these institutions based on the performance in a standardized assessment process (Özer, 2021d). In other words, BILSEMs provide extra support to these students to maximize their potential. Students continue their education in their schools, they also attend BILSEM programs at non-school times.

BILSEMs create important opportunities for IPR through their student profile and educational opportunities. In addition, BILSEM teachers' postgraduate education rates are above the Türkiye average and separate workshop programs are implemented in the

fields of general talent, music, and fine arts. With the improved environment, students with high performance in BILSEMs are more likely to use innovative technologies and create original products by improving their project development skills.

In recent years, MoNE has taken two major steps to increase the IPR potential of these institutions. The first of these steps is to increase the accessibility of BILSEMs: while there were 181 BILSEMs in 2020, the number of BILSEMs doubled and reached 355 as of May 2022. Thus, MoNE has reached the pre-defined target of increasing the number of BILSEM to 350. In 2021, the share of IPR trainings were intensified to teachers' professional development in the BILSEM program in Türkiye. The results of increased trainings and incentives become evident recently; BILSEMs applied for 184 patents, 394 utility models, 2,063 designs and 16 trademarks during the year. In the first 10 months of 2022, the number of IPR applications increased further to almost 2.3k: 199 patents, 805 utility models, 1.2k designs, and 42 trademarks. 541 of these applications were registered as IPR products. Considering that the total number of applications was less than 100 in 2019, the improvements yield solid outcomes in BILSEMs.

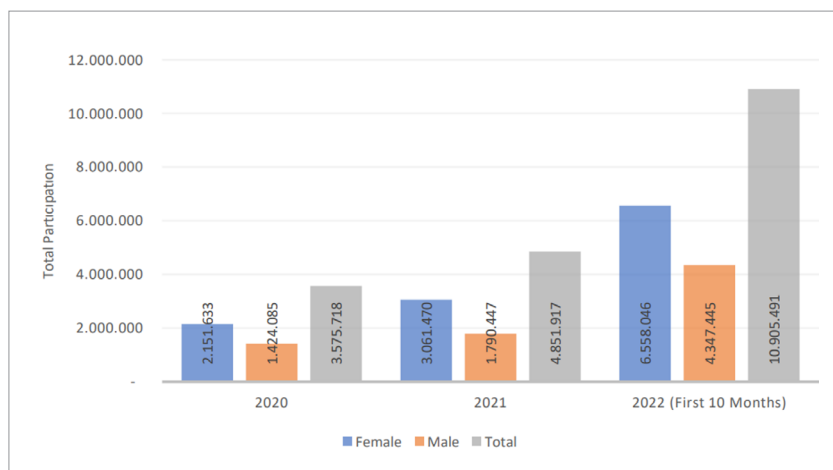
3.3. Increasing the Production Quality of Lifelong Education Courses and Technical Institutions with IPR

Public education courses (PECs) offer important opportunities for acquiring vocational skills and employability of adults within the scope of lifelong learning in Türkiye. These courses are diversified in terms of vocational fields with a diversity of participants' ages and education levels. Both the employability of individuals and their potential to contribute to the Turkish economy through these skills increases (MEB, 2022).

The scale and participation of PECs are an important indicator of the great potential of these courses for IPR. Currently, PECs are presented in 1,000 Public Education Centers in 81 provinces of

Türkiye and they provide a great size of participants: more than 10 million 900k in the first 10 months of 2022. Figure 7 shows the change the participation in PECs in the last three years.

Figure 7: The Total Participation in PECs in the Last Three Years



As seen in Figure 7, the total participation peaked in 2022. In the last ten months, the monthly average number of participants increased by more than 1 million. Thus, the total participation reached almost 11 million in the last 10 months of 2022.

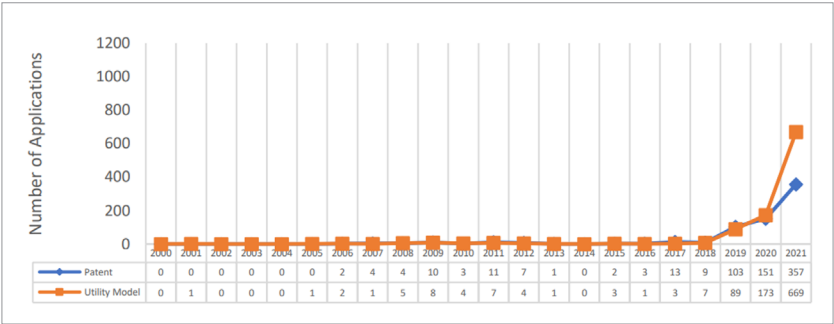
In addition, these courses support women's employment and educational involvement greatly; approximately 60% of the PEC participants are women. Based on recent statistics, the courses have the potential to reach the adult population in Türkiye, with a target of at least one million citizens to attend each month.

On the other hand, the technical institutions (Olgunlaşma Enstitüleri) provide traditional and cultural products with innovative methods. These institutions are unique examples of VET and contribute to the transfer of cultural values between generations. Redesigning traditional products with modern methods creates an extremely

suitable environment for innovative productions. Similarly, awareness of IPR is important for the production of using new methods while keeping the originality.

MoNE started R&D activities in technical institutions taking into account the potential of production. Teacher trainings on IPR were intensified at these institutes. In this context, both the production capacity of the institutes and the skills of the trainers have been improved. More than 7.4k applications were made from these institutes, and 6.8k products were registered. Therefore, the R&D era in technical institutions provides solid IPR improvements in a short time. Türkiye has a remarkable production culture, and now it leads to IPR with the use of production via innovative methods. As a result of recent steps on IPR, the change in applications for IPR products by MoNE institutions is given in Figure 8.

Figure 8: IPR Applications by MoNE Institutions between 2000 and 2021 (Turkish Patent & Trademark Office)



As seen in Figure 8, the application number of patents and utility models has increased significantly as a result of MoNE policies on IPR. It is worth noting that, MoNE institutions made more IPR applications in 2019 than the total number of applications they made in the previous 19 years. Moreover, this increasing trend continues: In the last three years, the number of IPR applications followed a further increasing trend compared to 2019.

4. Discussion & Conclusion

Today, the shift of production technologies to an abstract and intellectual context adds value to the economy and increases the importance of IPR. Large-scale projects have been initiated for the development of IPR products such as patents, utility models, designs, brands and industrial designs in many developed and developing countries. Findings indicating that there is a significant relationship between IPR activity and economic development have led to a focus on IPR. At this point, societal awareness of IPR becomes critical for IPR production and sustainable economic development.

It is of great importance to inform society about IPR as early as possible. At this point, education is the key to gaining awareness and acquiring related skills. In the past, the concept of IPR was mostly associated with higher education (tertiary education) and universities. However, the knowledge and skills of IPR are extended to all education levels as it gained importance over time. Most countries, including OECD countries, have begun to include IPR in their education systems. Today, skills of IPR are acquired by students by curriculum or through large-scale projects on IPR.

Statistics on IPR products in Türkiye show that concrete improvements have been provided particularly in the last 20 years. The number of applications, which was incomparably low at the beginning of the 2000s, showed a remarkable increase until 2020, thus the importance attributed to the subject has increased considerably. However, as emphasized in the policy documents such as the “Eleventh Development Plan (2019-2023)” and “National IPR Strategy and Analysis Report”, Türkiye still performs below the developed countries and own potential in IPR products (Ministry, 2018; TOBB, 2013).

The policy documents give important insights into what needs to be done for Türkiye to compete with economically developed countries and to achieve its own potential. Obviously, improvement in IPR

depends on multiple factors and requires the joint efforts of diverse stakeholders. However, both policy documents highlighted that the importance of IPR is not adequately understood in society and there is a great need for raising awareness projects. Additionally, the inadequate cooperation between public institutions and the private sector was mentioned in these documents. Lastly, the diversity in the distribution of resources and providing IPR leads to extra challenges.

In recent years, MoNE prioritized IPR awareness and production with the use of the production capacity of educational institutions towards IPR. In this context, the potential of VET institutions, BILSEMs, science high schools, PECs and technical institutions have started to be used effectively. For the first time, MoNE set quantitative IPR targets for its institutions and monitored the progress. The establishment of 55 R&D centers with an investment of ₺ 25 million, the increase in the number of BILSEMs to 355, and the extension of R&D activities in technical institutes with an initial investment of ₺ 6 million are particular examples of the related investment. Another support policy is the training of teachers, experts and students on the prominent elements of IPR including project development and planning. Moreover, both participation and awareness of IPR in PECs were greatly increased. In this context, MoNE has taken concrete steps to overcome the highlighted limitations including lack of information and awareness.

MoNE has also made significant improvements in IPR in line with the suggestions mentioned in policy documents. Collaboration is improved with both public and private sector representatives at different levels of education in VET. In this process, the scope of collaborations between Ministries as well as between MoNE and private sector representatives has been extended. This is important in the context of integrating the knowledge and experience of different institutions to serve a common purpose. In addition, the “Intellectual Property Office”, which was established in cooperation with the

Turkish Patent and Trademark Office, ensures the monitoring and promotion of IPR productions and the necessary organization to achieve the targets. This prevents the challenges coming from diversity in resource allocation and process monitoring, which is considered a problem in policy documents.

The prioritization of IPR by MoNE yields concrete outputs in a short time. In 2021, BILSEMs applied for the registration of 2.6k products, including 184 patents, 394 utility models, 2.063 designs and 16 brands, and registered 1,3k products. In 2022, the performance increased and almost 2,3k applications were made in just 10 months. Considering that a total of 98 applications were made from BILSEMs in 2019, the improvement is obvious. When all MoNE institutions were considered, more than 14k applications were made, and approximately 11,6k products were registered as IPR products in the first ten months of 2022. Thus, the pre-decided target of 7,500 registrations of MoNE for the year 2022 was completed only in the first three months and reached a higher level in the ten months.

As mentioned in the Eleventh Development Plan, the joint effort of institutions is vital for Türkiye to become one of the leading countries in IPR, to be among the top 10 countries in at least one sector, and to reach 25k patent applications in 2023. As seen in the steps by MoNE, infrastructural support, teacher training and awareness projects are provided. As an addition, the cooperation between public and private institutions in different sectors is improved and extended. The recent outcomes indicate that significant improvements are possible in a short time when the necessary dedication and effort are attached.

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REVOLUTIONIZING EDUCATION IN TÜRKİYE: A YEAR OF MULTI-FACETED IMPROVEMENTS BY THE MINISTRY OF NATIONAL EDUCATION IN 2022*

**Özer, M., & Suna, H. E. (2023). Revolutionizing education in Türkiye: A year of multi-faceted improvements by The Ministry of National Education in 2022.*

1. The Universalization of Early Childhood Education

Research supports the notion that early childhood education plays a crucial role in fostering favorable cognitive and social-emotional development outcomes in children, with enduring positive effects. Studies indicate that children who receive early childhood education are more likely to achieve success in the long term, demonstrate enhanced interpersonal skills, and experience smoother transitions to the labor market (Johnson, 1996; Khan, Tahir & Aurangzeb, 2019; OECD, 2020; Suna & Özer, 2022). Thus, the combination of all these factors makes early childhood education one of the most effective areas of educational investment (Heckman, 2008; Lynch & Vaghul, 2015). Furthermore, expanding (universalizing) early childhood education to encompass the population has been a prominent global education policy objective for many years (OECD, 2020a; Özer, Aşkar & Suna, 2023; UNICEF, 2020).

The Turkish education policy has long incorporated the expansion of early childhood education, as evidenced by several key resources (AÇEV, 2009; Suna & Özer, 2022; Özer, Aşkar & Suna, 2023). National development plans, education policy documents, and strategy reports have increasingly begun to emphasize early childhood education since the 1990s. However, despite the stated objective of providing "at least one year of early childhood education" to every student in the 2000s, the enrollment rates for students in this age group remained low, reaching only 11% until 2010 for 5-year-olds. In this context, it was not until the 2010s that significant progress was made in achieving higher enrollment rates in early childhood education.

To achieve the targeted level for early childhood education dissemination, the Ministry of National Education (MoNE) launched the "Early Childhood Education Campaign" in 2021 (Özer, Aşkar & Suna, 2023). The first phase of this campaign focuses on promoting early childhood education throughout the country. One of the main challenges in expanding early childhood education in Türkiye is the lack of adequate physical infrastructure.

As part of reaching the targeted schooling rates in early childhood education, MoNE intended to set up 3,000 new kindergartens in 2022. Needs assessments were conducted at provincial and district levels during the planning process, and considering Istanbul's high population density and low enrollment rate, 1,000 of these kindergartens were designated for the city. However, due to the plans developed by MoNE to achieve the OECD average in schooling rates for children ages 3-5, 6,004 new kindergartens have been established, exceeding expectations. Thus, an increase in planned kindergartens has resulted in the opening of 1,010 new kindergartens in Istanbul.

The new kindergarten capacities created by MoNE have significantly contributed to the expansion of early childhood education in Türkiye. This infrastructure has resulted in an increase in schooling for children to the age of 5 from 65% to 99%, for children to the age of 4 from 16% to 38%, and for children to the age of 3 from 9% to 16%. By undertaking these steps within the scope of the campaign, it was also possible to achieve the target of "at least one year of early childhood education for every student" by the age of 5. MoNE's goal to further increase schooling rates in 2023 by ensuring that the necessary infrastructure is in place. By 2023, infrastructure supports plans to increase schooling from 16% to 50% at age 3, 38% to 70% at age 4, and 100% at age 5.

2. Increasing Access to Education

Access to education, considered a fundamental human right, is a crucial indicator of equality of opportunity in the field of education (Lewin, 2015; UNESCO, 2017). The concept of equality of opportunity is incomplete without ensuring access to education irrespective of one's socioeconomic background. Thus, one of the main objectives of MoNE is to optimize schooling rates and expand access to education services for all members of society.

MoNE has set an ambitious target of achieving schooling rates of 95% and above at all levels of education from early childhood education through upper-secondary education by 2022. To achieve this goal, substantial investments have been made in early childhood education infrastructure, along with financial assistance to ensure accessibility to education for students facing socioeconomic disadvantages. Furthermore, priority has been given to early childhood education in the "Village Life Centers" initiatives, mentioned in the following sections, to ensure that students with low populations are able to participate in education.

Several mechanisms have been employed simultaneously to enhance access to primary and secondary education in Türkiye. Firstly, the restriction on the minimum of students required to open primary schools was lifted, thus paving the way to establishing primary schools in low-population areas on demand. Secondly, the records from the Central Population Administration System (MERNIS) and MoNE were integrated to facilitate the monitoring of students' access to education. Thirdly, the implementation of the "Early Warning and Monitoring System" has paved the way to identify students who may be considering dropping out of school hence providing early intervention opportunities.

These policies have significantly contributed to the increase in school enrollment across all levels of education in Türkiye. For example, early childhood education schooling increased from 65% to 99%, primary education to 99.64%, and secondary education from 90% to 98.7%. This has resulted in access to education surpassing the targeted levels at all education levels. In order to further strengthen and enhance the effectiveness of the mechanisms established in 2023, MoNE aims to achieve access rates of 99% and above at all levels, reflecting its commitment to ensuring widespread access to education for all students in Türkiye.

3. Strengthening the Vocational Education and Training System

3.1 Enhancing Apprenticeship Training

In today's rapidly changing technological landscape, apprenticeship training has become increasingly important to meet the demands of the labor market (Christensen et al., 2020; OECD, 2017; Özer, 2018, 2019a, 2019b). Apprenticeship education offers students the opportunity to develop vocational skills through on-the-job training (Christensen et al., 2020; Özer, 2020a, 2021a). The purpose of this methodology is to provide students with the opportunity to acquire professional skills directly through practical experience in their chosen field, providing them with valuable real-life job conditions to enhance their learning process.

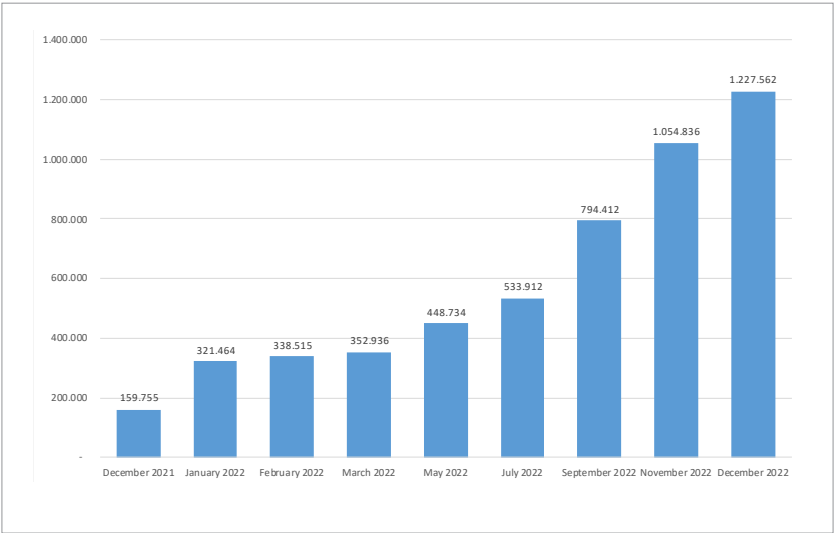
Intensive on-the-job training in real work environments assists students in acquiring the skills required by the labor market. As a result, graduates who have received apprenticeship training demonstrate higher rates of successful transition from school to the labor market (Özer & Suna, 2020a). Within the framework of vocational education and training, apprenticeship training has the highest employment rates for students in Türkiye. Recent studies conducted by MoNE have found that apprenticeship students have an employment rate of 88%, with approximately 75% of employed graduates working at institutions where they received on-the-job training (MoNE, 2018; Özer & Suna, 2020a).

MoNE's efforts to strengthen apprenticeship training in Türkiye have yielded significant results, leading to a remarkable increase in the popularity of apprenticeships in upper-secondary VET. In 2021, apprenticeship training accounted for around 5% of upper-secondary VET in Türkiye, with approximately 159 thousand students enrolled in apprenticeship programs. However, through comprehensive improvements aimed at meeting the labor market's needs for skilled journeymen and masters, MoNE has made remarkable strides. One notable improvement is the legislative amendments

made in Vocational Education Law No. 3308, which have led to increased wages for journeymen who successfully completed the 11th grade. Previously, journeymen received one-third of the minimum salary, but now they receive half of it. According to the same regulation, the state now covers the wages of students undergoing apprenticeship training during their education rather than the companies (Özer, 2022a). To further amplify awareness and understanding of these improvements, a simultaneous information campaign was conducted by MoNE highlighting the improvements made in apprenticeship training as well as the opportunities provided by this training.

These concerted efforts by MoNE have significantly transformed the perception of vocational education and training in Turkish society, resulting in a substantial increase in the popularity of apprenticeship training. Figure 1 illustrates the growing popularity of apprenticeships in upper-secondary VET. The number of students receiving apprenticeship training has increased from 159 thousand to 1.2 million in 2022. Concretely, after the improvements were made, the number of students who received apprenticeship training increased by more than seven times. Thus, despite the share of apprenticeship training in vocational secondary education being less than 5% in 2021, it reached 52% in 2022 (Özer & Suna, 2022). A total of 1.5 million students are expected to enroll in the program by 2023, according to MoNE.

Figure 1: The Number of Students in Apprenticeship Programs during 2022



3.2. Establishing International Vocational High Schools

In recent years, the global recognition of the importance of VET has grown significantly, driven by changing labor market demands resulting from technological advancements and its role in sustainable development (Commission, 2022; OECD, 2019a). This has led to a rapid surge in the internationalization of various VET systems, which differ significantly from one another and has fostered increased sharing of best practices among countries. Various international organizations, such as the European Training Foundation (ETF) and the European Centre for the Development of Vocational Training (CEDEFOP), carry out projects aimed at increasing the interaction between VET systems in different countries (CEDEFOP, 2020a; ETF, 2018). The objective here is to disseminate best practices by facilitating mutual learning among VET systems, each of which has its unique characteristics.

Over the past few years, Türkiye has made significant strides in strengthening the VET system with a primary focus on enhancing the relationship between vocational education and training and the labor market. This has resulted in the participation of the labor market in all stages of vocational education and training, ranging from curriculum development and teacher training to on-the-job training and infrastructure enhancement. By involving the labor market in the education process, there is now an opportunity to address the longstanding issue of a skills gap in the workforce. MoNE, in collaboration with the labor market, has updated curricula for all vocational fields, improved infrastructure in VET institutions, enhanced teacher training, and established employment-guaranteed or priority VET programs (Canbal et al., 2020). These efforts have led to a significant change in the social perception of VET, with successful students increasingly showing a preference for VET institutions, despite increased quotas.

As part of its efforts to demonstrate its advancements in VET on a global scale and enable students from different countries to benefit from these opportunities, MoNE has announced the establishment of "International Vocational High Schools" in 2022. This initiative has resulted in the establishment of seven international vocational and technical Anatolian high schools in six provinces including Istanbul, Ankara, Bursa, Konya, Balıkesir, and Ordu. The first students were admitted to these vocational schools in the 2022-2023 academic year and the educational institutions have begun to provide education to students from Albania, Bulgaria, Kosovo, North Macedonia, Serbia, and Bosnia and Herzegovina as of 2023. This project is expected to continue expanding, with an increase in the number of international vocational high schools and a greater diversity of countries participating, thus further promoting international cooperation and exchange in vocational education and training.

3.3. Establishing Vocational Training Centers within Organized Industrial Zones

The effectiveness of vocational education and training systems is significantly influenced by their interaction with the labor market as well as their ability to meet labor market expectations (Hanushek, Woessmann & Zhang, 2011; Özer, 2020b). Therefore, countries are increasingly prioritizing the improvement of the relationship between VET and the labor market, aiming to better understand the dynamics of the labor market and respond to its evolving demands (European Parliament, 2019; OECD, 2010). Thus, it is crucial for all stakeholders to develop a mutual understanding in all vocational fields, ensuring that the VET system aligns with the needs of the labor market and prepares students for successful careers.

Organized Industrial Zones (OIZ) present great opportunities due to the diverse range of industries they encompass. OIZs bring together production and services from various sectors in a single location, resulting in a wide array of professions. Capitalizing on this situation will present an opportunity to provide training in multiple vocational fields within the OIZs, to utilize the expertise and experience of the OIZ experts, and to leverage the production areas of the OIZs as training facilities (MoNE, 2019a; Özer, 2019c).

In recognition of the significant potential of OIZs, MoNE took action in 2021 to enhance the quality of the VET system. As part of its mission, MoNE established at least one vocational training center (VTC) in every OIZ and industrial estate in Türkiye or associated them with a vocational training center in close proximity in 2022. This initiative aims to enrich apprenticeship education, which has already undergone important improvements in the physical and human resources available in OIZs. It is anticipated that students who participate in apprenticeship training will gain the skills demanded by the labor market, leading to an improvement in the overall quality of education through the opportunities offered by OIZs.

3.4. Developing Vocational Training Center Skill Development Programs

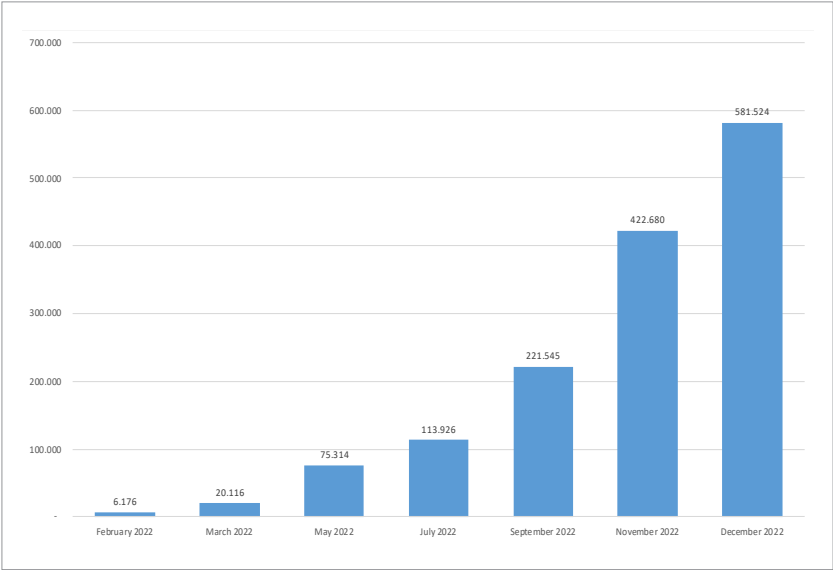
VET system with an employment-oriented structure is a viable option for individuals who have completed various levels of education as well as for students who are still of schooling age (CEDEFOP, 2020b; ILO, 2022; van Wieringen & Atwell, 1999). In addition, addressing VET from the perspective of "lifelong learning" requires the goal of making these opportunities accessible to all segments of society. Currently, a large number of on-going-projects in a number of countries allow aging societies to participate in education once again (Eurydice, 2021; Özer & Suna, 2022a).

In response to the rapid pace of technological developments, the skills demanded by the labor market are undergoing rapid changes (Bazylik & Gibbs, 2022; Dachs, 2019; Perc, Özer & Hojnik, 2019). Routine jobs requiring low levels of skill are being replaced by automation in the business world (Dahlin, 2019; de Vries et al., 2020). Therefore, it is crucial for individuals to acquire digital competencies and complex social skills such as cooperation and empathy (Deming, 2017; ILO, 2021). In light of these changes, it is vital that adults, who are integral members of society, upskill and reskill in order to meet the evolving demands of the business world. As a result, adult education programs play an important role in renewing the skills of aging populations.

In 2022, the Vocational Education Center (VTC) Skill Development Program, implemented by MoNE, marked a significant milestone in adult skills development (Özer & Suna, 2022a, 2023a). This program incorporates the flexible structure of apprenticeship programs within VTCs as well as the work-oriented approach to adult education. By offering short-term training programs ranging from six months to eight months, MoNE aims to update the skills of adults according to the demands of the labor market. The program is open to individuals who have graduated from high school and above, serving as a vital mechanism for those seeking to reskill and upskill. Figure 2

illustrates the notable increase in the number of adults participating in VTC skill development programs, surpassing 580,000 within a short period of time.

Figure 2: The Number of Students in VTC Skill Development Programs during 2022



Furthermore, recent studies indicate that women are actively engaged in VET, with gender distribution reaching its most balanced level (Özer & Suna, 2022a). The study further indicates that there is a significant demand for graduates with associate's, undergraduate, and postgraduate degrees, with approximately 19% of participants in the first four months coming from associate's or higher education levels. The demand for employment-oriented mechanisms clearly illustrates the importance of adult skills development in Türkiye. Looking ahead, MoNE aims to diversify and expand the range of training subjects offered in the skill development program in 2023.

4. Achieving Greater Quality of Opportunity in Education

4.1. Providing Free Supplemental Resources

Research has consistently shown that the quality and diversity of educational materials have a significant correlation with student outcomes (Read, 2015; Read & Treffgarne, 2011). Considering that learning is a highly individualized process, this is not surprising from the perspective of a learner. The availability of diverse and high-quality resources contributes significantly to the improvement of students' learning processes. By offering a wider range of resources, educators can better cater to the diverse learning needs of different students (Tiree, Fiore & Cook, 1994).

MoNE has taken a proactive step towards creating alternative learning resources by developing and publishing supplementary materials for students free of charge at the end of 2021. This initiative is primarily motivated by the creation of alternative learning resources for students who cannot access digital platforms for various reasons or who prefer to use printed materials. In this regard, developed supplementary materials are very important in order to eliminate dependency on external learning resources and minimize potential inequalities.

MoNE has taken significant steps to ensure access to supplementary resources for students. Building on the success of the free textbook distribution program that has been in place since 2003, MoNE has made preparations to print and deliver approximately 100 million supplementary resources to students by 2022. Remarkably, MoNE exceeded its target by printing and distributing 160 million free resources throughout the year. In response to the high demand from students and teachers, MoNE has further increased the availability of printed supplementary materials in 2023, with 200 million resources now available at no cost to students. Furthermore, school libraries have been provided with these supplementary materials, ensuring wider access for students across the country.

4.2. Opening of Village Life Centers

The rural-to-urban migration trend in Türkiye, which originated in the 1950s and has continued to escalate, has had profound implications for both education and social dynamics (Sevinç, Kantar Davran & Sevinç, 2018). Metropolitan cities, such as Istanbul, have experienced rapid population growth (Zdemir & Sertakaya Doan, 2022), necessitating the provision of services to cater to the expanding population. The impact of mobility on education has been particularly notable since the 1950s, with declining rural populations resulting in many former educational buildings being repurposed or left abandoned.

Numerous initiatives have been implemented over the years to address the educational access challenges faced by declining and dispersed rural populations (Özer, Gençoğlu & Suna, 2021). Projects such as mobile teacher classrooms and mobile classroom applications, etc., are some of how their access to education is supported through projects. While these efforts, along with increased infrastructure investments, have resulted in improved schooling rates in rural areas over the past two decades, the rates still remain relatively low in comparison to other regions.

MoNE took a significant step in 2022 when it initiated the transformation of school buildings, which had become idle due to migration, into "Village Life Centers", that would be inclusive for all stakeholders (Özer, 2022a, 2023a). After the transformations, Village Life Centers were reorganized as early childhood education centers, primary schools, secondary schools, and public education centers depending on their physical infrastructure. With these adjustments, students in different educational levels and their families will have access to a single educational environment. Furthermore, with the removal of the minimum number of students requirement, MoNE has eased the process of establishing primary schools in low-populated areas.

Within the scope of this project, MoNE is aiming to open 2,000 Village Life Centers throughout Türkiye to disseminate all these improvements. With the positive feedback obtained from the field, 2,400 Village Life Centers were built in 2022, exceeding the original goal by a substantial margin. In 2023, MoNE aims to have all the suitable buildings transformed into Village Life Center.

4.3. Free Summer School Program in Public Schools

The COVID-19 pandemic has had a negative impact on education worldwide (Chaturvedi, Vishwakarma & Singh, 2021; Pokhrel & Chhetri, 2021; Özer & Suna, 2020b). Many schools across the world have been closed, and face-to-face instruction has been suspended, leading to a shift toward distance education methods (Engzell, Frey & Verhagen, 2021; Goudeau et al., 2021; Munoz-Najar et al., 2021; Patrinos, Vegas & Carter- Rau, 2022). While distance education has provided important opportunities for continuing education during these challenging times, it has also exacerbated existing inequalities (Goudeau et al., 2021; Grewenig et al., 2021; Özer et al., 2020). The gap in digital literacy among students and their access to resources at home has played a decisive role in this period, leading to an enlargement of existing gaps between students. As a result, the "equalizing" environment of schools has been disrupted, and inequalities in education have been exacerbated.

As the pandemic gradually receded and the process was brought under control, the disparities became further apparent with the opening of schools. According to numerous studies conducted during and after the pandemic, achievement gaps and learning losses among students have increased (Dorn et al., 2021; Lewis et al., 2022). In response to these challenges, there have been various mechanisms and methods developed by education systems to compensate for the increasing inequalities during the pandemic (UNESCO, 2020). Several international organizations involved in the field of education have also made recommendations regarding the development of compensation mechanisms for the education system. In the absence

of support mechanisms and compensatory education, inequalities among students will increase even more.

Various measures have been implemented to mitigate the adverse effects of the pandemic on education (UNESCO, 2020). The most common of these practices are extending the duration of the education period and creating educational opportunities outside regular school hours (Saturday classes, free summer school applications, study hours, etc.) as well as providing various personal learning opportunities. These compensatory measures differ across education systems, with each system adopting its own strategies to address the challenges posed by the pandemic.

In an effort to address the learning losses and inequalities resulting from the pandemic, MoNE introduced a program offering free summer schools in public schools. In 2022, nearly 1 million students received summer school scholarships in the four fields of science, art, mathematics, and English. These summer schools not only aim to help students compensate for their educational losses but also provide opportunities for social and emotional skill development, as well as experiencing the school routine during the summer break.

In response to the positive response received from the summer school program, MoNE has launched a new initiative called the "winter school program" during the semester break. Furthermore, MoNE announced that the summer school application will not be specific to 2022, but will be a permanent offering. The goal of the summer school is to increase participation in 2023 by enriching the programs offered.

4.4. The Provision of Guidance and Psychological Counseling

The availability and quality of counseling services are essential for maintaining the well-being of students (Alexander et al., 2020; Gysbers & Henderson, 2012). When students are consistently supported psychologically and are aware that their problems will be addressed, they are more likely to feel a sense of belonging to the school and to

develop positive attitudes toward learning (Brooks, 2021). Accordingly, psychological counseling services play a crucial role in creating a positive school climate contributing to the overall safety and supportiveness of schools (Hernandez & Seem, 2004). Furthermore, psychological counseling processes have played an important role in providing support against the psychological problems caused by the COVID-19 pandemic (Alexander et al., 2020).

Guidance services play a vital role in helping students recognize their skills and make informed choices based on their interests, achievements, and other personal characteristics (Plant, 2004). The quality of guidance services provided in both the educational and vocational fields is crucial in shaping the educational and vocational preferences of students (Eriksson, Högdin & Isaksson, 2018; Plant, 2004). Therefore, it seems necessary to improve the quality of guidance services to ensure that students have a clear understanding of their own competencies and conscious orientations in education and employment.

MoNE intends to increase the effectiveness of guidance and psychological counseling services by revising them to address the evolving threats that students face today. These services contribute significantly to combatting physical and psychological addictions, which have been on the rise globally. The prolonged exposure to screens and disruption of students' school schedules during the COVID-19 pandemic increased the risk of digital addiction in particular (Pincus et al., 2020). In order to combat physical and digital addictions, MoNE has ensured that school psychological counseling services are used effectively. The initial goal of providing psychological support to 7.5 million students, 150 thousand teachers, and 1 million parents received psychological support in the fight against addiction, set at the beginning of the year, was surpassed in 2022. As of 2023, more than 19 million students, 1.2 million teachers, and 5 million parents in the education system are expected to receive psychological support trainings.

4.5. Opportunities for Individualized Digital Learning

Developing educational technologies has enabled students to experience a personalized learning environment (Major, Francis & Tsapali, 2021; Twyman, 2018). As a result, these technologies developing educational technologies have enabled students to experience a personalized learning environment (Major, Francis & Tsapali, 2021; Twyman, 2018). As each student has unique learning deficiencies, these mechanisms allow for a fully personalized educational plan to be developed. The use of this technology to support formal education activities may be able to increase the efficiency of education. This is the reason why personalized digital education platforms have become increasingly popular (Major, Francis & Tsapali, 2021; UNICEF, 2022). As each student has unique learning deficiencies, these mechanisms allow for a fully personalized educational plan to be developed. The utilization of such technology to support formal education activities has the potential to enhance the efficiency of education, making personalized digital education platforms increasingly popular (UNICEF, 2022).

MoNE developed the Student/Teacher Support System (ÖDS) to address learning deficiencies among students and implemented it in 2022. By collecting the items used in the supplementary resources published monthly by MoNE in a large pool, ÖDS determines the learning deficiencies of students across different fields. Based on this information, personalized recommendations, including educational materials and online course videos published by MoNE, are provided to students to address their specific learning needs. Accordingly, the system uses a personalized approach both in identifying learning needs and in providing suggestions.

It is important to note that ÖDS goes beyond providing suggestions for students' learning needs, as it also offers options for teachers. With the platform, teachers can design supportive materials to identify their students' learning deficiencies and monitor their development. Therefore, ÖDS provides teachers with the opportunity to monitor their students' progress outside of the classroom.

4.6. Mathematical Campaign

Mathematics serves as a cornerstone for rational thought and a deeper understanding of the world (OECD, 2018a). It also provides a fundamental infrastructure for understanding relationships between variables, establishing cause-effect relationships, and developing a critical perspective (Su, Ricci & Mnatsakanian, 2016). Furthermore, mathematical thinking plays a pivotal role in developing analytical thinking, critical reasoning, and 21st-century skills in this context (Rizki & Priatna, 2019). In the past, international monitoring research has studied the importance of mathematics skills and the relationship between them and other skills.

On the other hand, mathematics has been one of the fields in which Turkish students have shown relatively low performance for several years, as indicated by national-level transition exams and international achievement monitoring research (MoNE, 2021; Mullis et al., 2020; OECD, 2019b). As evidenced by the PISA and TIMSS cycles of 2018 and 2019, significant performance improvements in mathematics have remained more limited over the last 20 years (Mullis et al., 2020; OECD, 2019b). The findings of this study are similar to those of the exams used in the transition from secondary education to higher education and the application of the TMF-ÖBA program developed by MoNE (MoNE, 2019b; ÖSYM, 2021).

As part of the "Mathematical Campaign" initiative, MoNE intends to eliminate mathematics limitations, improve student performance, and cultivate a positive attitude toward mathematics. To achieve these goals, innovative methods such as gamification, the development of innovative educational materials, and the exploration of various mathematics fields in teaching mathematics. Through these efforts, it is possible to change the current perception of mathematics and integrate it more into our daily lives.

To maximize the impact of the mathematics campaign, MoNE has developed the Mathematics Digital Platform. A variety of topics are discussed on this platform, which can be accessed at <https://matematik.eba.gov.tr/icerik/matematik-dijital-egitim-platformu-764>. This platform covers a wide range of topics, including the history of mathematics, 3D games, and the discovery of formulas. The platform also offers online training for students, teachers, and parents. It is intended to develop Turkish and Foreign Language platforms by 2023 in addition to the Mathematics Platform, which is attracting great interest from all education stakeholders.

4.7. Free School Lunches

A well-balanced and nutritious diet is recognized as a crucial factor in the physical and psychological development of students (Egan et al., 2019). Extensive research has demonstrated that healthy and adequate nutrition has a significant impact on child health and academic performance (Egan et al., 2019; WHO, 1999). International organizations, including the World Health Organization, have emphasized the strong connection between nutrition and development. Upon the suggestions of these organizations, major projects are carried out to distribute free school meals to students (Global Child Nutrition Foundation, 2022; Guio, 2023; Illokken et al., 2021). However, it is important to note that nutrition can become a source of inequality due to socioeconomic disparities among families, potentially leading to developmental differences among students.

As part of its initiatives to promote vocational education and training and early childhood education, MoNE has implemented a program to provide free meals to students with the support of VET institutions. Since 2022, approximately 1.8 million students per day have been receiving free meals, up from the initial capacity of 1.5 million meals due to infrastructure improvements, investment and human resource enrichment. In addition, as part of its efforts to further strengthen early childhood education and support children's development, MoNE has extended the provision of free school

meals to all students enrolled in early childhood education programs.

Based on the planning conducted, it was determined that daily production capacity should be increased to 5 million so that all students in early childhood education, as well as the current students who have been provided with food, would be able to receive meals. By increasing the production capacity of educational institutions throughout Türkiye, the necessary infrastructure was prepared for the delivery of 5 million meals.

4.8. Minimizing the Opportunity Differences between Schools

Students' attitudes toward school and educational performance are closely related to the quality of their educational environments (Barrera-Osorio, Fasih, & Patrinos, 2009; The World Bank, 2013). An educational environment with a richer infrastructure and more interaction opportunities for students helps them feel comfortable and amplifies their learning (Barrett et al., 2019). Therefore, the goal of creating a positive school climate is to ensure that all students experience these characteristics. This involves establishing standards for the educational environment in all schools and improving the environment in a manner that enhances continuous learning making a significant contribution to the quality of education.

Over the past few years, MoNE has undertaken large projects to improve the infrastructure and physical environment of schools such as the "1,000 Schools in Vocational Education and Training" and "10,000 Schools in Primary Education" projects, which have provided multidimensional support to schools (Özer, 2022b). Additionally, improvements to school environments have extended beyond these projects. For the first time in 2022, a direct budget was sent to all schools. This budget has been utilized for small-scale maintenance and repairs, as well as the purchase of stationery and cleaning supplies, directly benefiting schools. As of 2022, approximately ₺7 billion has been allocated to provide schools with a better learning environment.

4.9. Installation and Enrichment of Library Resources

Reading is widely recognized as a fundamental academic and social skill in the 21st century (Delgadova, 2015; Hanover Research, 2016; Kiszczak, 2019). Students who acquire strong reading skills throughout the learning process are likely to excel in other subjects as well (Caponera, Sestito & Russo, 2016). Moreover, the amount of information produced by rapid technological advancements today is constantly increasing, and the presentation of information primarily through written and visual materials emphasizes the importance of reading skills (OECD, 2021).

In addition to the impact of reading skills on academic and social skills, there is a growing number of projects that are being implemented to develop these skills (Ferrer & Staley, 2016; Greaney, 1996). Many countries conduct studies monitoring students' reading skills and evaluating their relationship to various factors (Darr, 2017; International Consultative Forum on Education for All, 2000; NMSSA, 2015). Several international follow-up studies have demonstrated that the diversity and richness of reading resources are significantly related to students' reading skills (Brozo, Shiel & Topping, 2007; Heppt, Olczyk & Volodina, 2022). Consequently, as the diversity of reading sources increases, this diversity is reflected in student performance.

Recognizing the critical importance of reading skills, MoNE has taken significant steps to promote reading through the "No School Without a Library" project. Within a span of three months, 16,361 libraries were established and equipped with reading materials. Additionally, schools that already have libraries were included in the project, and their reading resources were expanded. Prior to the initiation of the project, it was estimated that school libraries had approximately 27 million books before the project began, but by the end of 2022, this number had increased to over 110 million. Looking ahead, the goal for 2023 is to further augment support for reading resources and increase the total number of books in school libraries

to an ambitious target of 150 million. This concerted effort underscores the commitment of MoNE to enhance reading opportunities for students across the country.

4.10. School-Based Large-Scale Projects

There has long been evidence that school climate influences many educational outcomes (Greenway, 2017; Konold et al., 2018; Teng, 2020). As defined by the OECD, a positive school climate fosters students' sense of belonging, positive attitudes towards education, self-confidence, and peer relationships, and ultimately leads to higher academic achievement (Dinçer, 2021; Konold et al., 2018; OECD, 2019c; Teng, 2020). Moreover, studies have also shown that a positive school serves as a protective factor against early dropouts (Daily, 2020). Given the manifold benefits associated with a positive school climate, it has become one of the primary areas of investment in educational systems.

There is no doubt that enhancing school climate is a complex undertaking that requires comprehensive improvements across multiple dimensions, beyond just physical infrastructure (Voight & Nation, 216). In order to cultivate a positive school climate, it is necessary to provide support programs for disadvantaged students, mechanisms to foster parental participation in education, safe, rich educational environments, and educational opportunities for teachers (Fisher & Fraser, 1991; Haynes, Comer & Hamilton-Lee, 1989; OECD, 2012).

The "school-based improvement" approach implemented by MoNE, focusing on vocational high schools through the "1,000 Schools in Vocational Education & Training" project, demonstrates a holistic approach to improving school climate. By addressing both infrastructure needs and academic support programs, the project aims to tackle multiple challenges faced by these schools, such as low student performance, high dropout and absenteeism rates, and infrastructure requirements (Özer, 2022b). Teachers working in schools within the scope of the project received field training, pedagogical

training, first aid training, and addiction awareness training. To increase parents' participation in education, priority was given to non-formal education programs. Practically, almost 25% of VET high schools and 38% of VET students and teachers are included and benefit from multi-level support through the project (Özer, 2022b).

The approach used in the "1,000 Schools in Vocational Education & Training" project contributed greatly to improving the climate of the schools involved. A similar approach was used to strengthen primary education institutions in 2022 as a new project called "10,000 Schools in Primary Education". As part of this project, the needs of the ten thousand schools were determined, and then improvements were made to the physical infrastructure, for students, teachers, and parents similar to those in the "1,000 Schools in Vocational Education & Training" project.

4.11. Renovation of School Buildings

Schools are not just educational environments, but also serve as hubs for various activities for all segments of society (OECD, 2004). Consequently, it is essential that all educational institutions, especially those located in disaster-prone areas; provide a safe environment in which to educate students (OECD, 2004, 2017; UNCRD, 2008). With increasing waves of migration into cities, many countries face the need for new school construction and expansion of existing schools (OECD, 2004). Therefore, it is imperative to ensure that both newly constructed and existing educational buildings are protected against disasters to safeguard the continuity of education. The recent earthquake disaster in Kahramanmaraş serves as a stark reminder of the significance of adhering to safety standards and ensuring swift resumption of education (Özer, 2023b).

As a result of accelerating the building reinforcement works that MoNE had been conducting for years, it aims to complete the retrofitting of 650 schools for which the decision was taken to reinforce in

2022. The target number of 870 buildings was increased in 2022 as a result of the necessary investments and infrastructure preparations. During the retrofitting process, all major and minor repairs were completed on 870 buildings. In 2023, MoNE plans to complete the retrofitting of all buildings that had been designated for strengthening.

4.12. Building New Classrooms

Indicators of educational quality include the number of classrooms and the average number of students per classroom (NCES, 2022; OECD, 2006). Using these variables as indicators of quality because smaller class sizes allow teachers to provide more individual attention to students (Allen et al., 2013; Wang & Calvano, 2022). This can be particularly beneficial for disadvantaged students, as they may require additional support, which can be better addressed in smaller classrooms (Laitsch, Nguyen, & Younghusband, 2021). As a result, less crowded classrooms are important for enhancing student-student interaction and enhancing academic performance.

The construction of new classrooms in Türkiye is a very important measure to increase the quality of education where the population of school-age children is continually growing. Despite the increasing student population, creating adequate educational environments and reducing the average number of students per class requires significant investment and planning. There were just over 300 thousand classrooms in Türkiye at the beginning of the 2000s, and the number has increased to over 857 thousand. The large investments made in the last 20 years and the planning at the provincial and district levels have resulted in the average class size in all educational levels approaching the OECD averages, despite an increase in the student population to 19 million. In 2022, all schooling levels will have an enrollment rate of over 98%, and the average number of students per class will be similar to that of OECD countries.

To further improve the situation achieved over the past two decades and to further reduce the number of classrooms, MoNE intends to build 10,000 new classrooms by 2022. This initiative aims to achieve the OECD average for class sizes at all educational levels, despite having a larger student population compared to many other countries. As part of its efforts to reduce average class sizes to the lowest possible level at all levels, MoNE conducted evaluations at the regional, provincial, and district levels, and constructed 12 thousand new classrooms during the year, exceeding its target. Building on this success, MoNE plans to construct 15,000 new classrooms by 2023 using the same approach, to further reduce average class sizes to the lowest possible level at all levels of education.

5. Increasing Production Capacity and Training R&D Activities

5.1. A Significant Increase in Revolving Fund Revenues

VET is a form of education where students develop their vocational skills through on-the-job training, with the production process playing a crucial role in their skill acquisition journey (CEDEFOP, 2021; Özer, 2020a, 2020b). The production process plays a significant role in assisting students in mastering their field of expertise during the skill acquisition process. The contribution of the production within VET to the students is important, but the contribution to the national economy is equally important (Nilsson, 2010). Firstly, students who develop their skills through these productions contribute to the sustainability of the development by providing the labor force required by the market. Additionally, all stakeholders, including students and teachers, provide financial gains from the productions (CEDEFOP, 2020c; Özer, 2020a). Lastly, VET offers a flexible and production-oriented structure that can be organized quickly for the production of products needed on a national level. This has been particularly evident in the wake of recent events such as the Covid-19 pandemic and the earthquake on February 6, 2023, where VET high schools have emerged as key producers of urgently required products for the country (Özer, 2020c, 2023b).

A significant improvement in vocational secondary education has been the increase in production capacity (Özer, 2020a, 2021a). VET institutions that do not have revolving fund enterprises have received support from MoNE to establish such enterprises. In addition, revolving funds were used to improve the infrastructure of upper-secondary VET institutions to increase production capacity. These investments and efforts led to a revolving fund income of ₺1 billion 162 million at the end of 2021, up from ₺ 248 million to 608 thousand in 2018. In 2021, teachers earned approximately ₺ 115 million and students earned approximately ₺ 49 million. With MoNE's increased support for revolving fund production, the institution set a production target of ₺ 1.5 billion in 2022 and provided educational institutions with the necessary infrastructure support. The increased support in 2022 resulted in a production of approximately ₺ 2 billion of revolving funds, which was above the target and contributed to the national economy. An estimated ₺ 100 million was given to students and ₺ 200 million was given to teachers as a contribution.

5.2. Increasing the Production of Intellectual Property

In the modern world, there has been a shift in the nature of production from physical to intellectual dimensions, and the context in which production takes place is evolving (Coombe & Turcotte, 2012; de Cock Buning, 2016). It is the innovative perspectives that lead to this production that have gained importance in the context of this change, rather than the concrete outputs of the production (Özer & Suna, 2022b). Advancements in technology have reached a point where it is possible to replicate physical production outputs rapidly. As a result, it has become unclear who or which institution originally produced the product, and what concept or idea it was conceived upon.

It is at this point that intellectual property becomes extremely important for claiming ownership of productions and claiming rights to various types of productions (Saha & Bhattacharya, 2011). Patents, utility models, brands, and designs are currently used to as-

sert production ownership (Saha & Bhattacharya, 2011; Van Dusen, 2013). The certification of productions by these means can be used by individuals and institutions to claim ownership rights, as well as to ensure that innovative ideas are protected.

Türkiye has recognized the importance of intellectual property and has begun to set targets in this regard in the 2000s (Özer & Suna, 2022b). In the 11th Development Plan, quantitative targets regarding intellectual property were established, and the steps necessary to achieve these targets were outlined. As of 2021, MoNE has started to provide multidimensional support for the evaluation of productions in educational institutions within the framework of intellectual property. As a result, teachers were trained in the development and implementation of projects related to intellectual property, and an "Intellectual Property Office" was established within MoNE in collaboration with the Turkish Patent and Trademark Office. Furthermore, quantitative targets have been set for intellectual property outputs, and production has progressed in line with these targets.

As a result of concerted efforts, intellectual property outputs in educational institutions have increased significantly. In contrast to the limited number of less than 10 registered products in 2017 and prior years, a target of 7,500 registrations by 2022 was set. In this process, MoNE has exceeded its target by effectively using all educational institutions, especially VET institutions, Science and Art Centers (BİLSEM), and technical institutes resulting in the registration of 8,300 products during the year. Furthermore, 162 registered products have been commercialized. As part of its extensive support for intellectual property, MoNE has set the goal of registering at least 10 thousand products in 2023 and commercializing at least 5% of these products.

6. Promoting Lifelong Learning

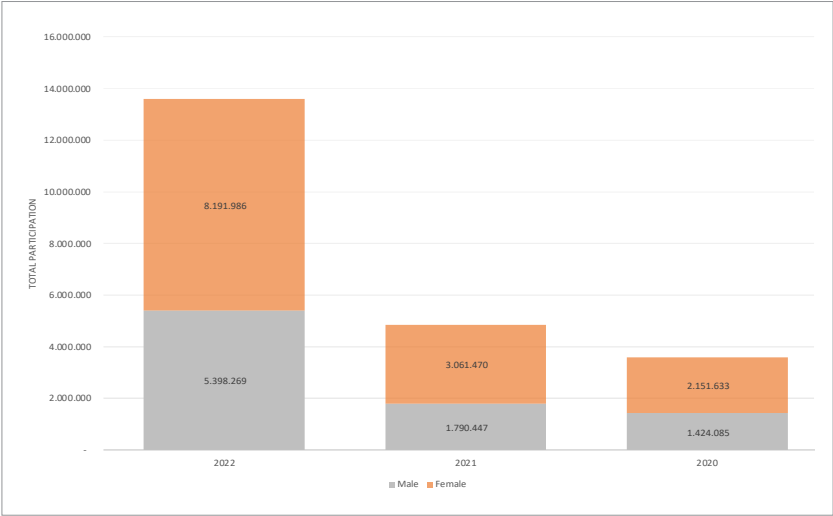
6.1. Enhancing Public Education Courses

The participation of adults in education is an important area of development in Türkiye, considering the significant proportion of the population that falls into this category (Eurydice, 2021; OECD, 2020b; Özer & Suna, 2022a). It has been noted in recent international large-scale studies that the average basic skills of adults between the ages of 16 and 64 in Türkiye are relatively low, and they participate in adult education at a significantly lower rate than average (Eurydice, 2021; OECD, 2020b). As a result of these findings, it is evident that policies to promote adult education in Türkiye are important (Özer & Suna, 2022a).

Adult education has been offered in Türkiye through public education courses for many years as part of lifelong learning. A key objective of MoNE has been to provide adult learners with skill development through the use of educational institutions for many years. MoNE, however, has taken a significant step by taking the feedback of adults in the region more into consideration when determining which courses will be offered within the scope of public education courses in the region at the end of 2021, increasing the capacity and diversity of education significantly. Furthermore, MoNE has conducted awareness campaigns on public education courses using provincial organizations and its social media accounts.

The efforts of MoNE in improving public education courses and raising awareness about adult education have resulted in a significant increase in participation (Özer, 2022a). First and foremost, the total number of participants has greatly increased since 2022, and it is hoped that 12 million citizens, at least one million each month, will participate in public education courses. Due to the actions taken by MoNE, the target set exceeded and reached 13,590,255 citizens in 2022 with a major share of females as seen in Figure 3.

Figure 3: Total Participation in Public Education Courses by Gender (2020-2022)



MoNE has set a target of 15 million citizens participating in adult education by 2023 using a similar approach. Furthermore, the adaptation of educational content to the digital environment and the implementation of the Adult Education Center Informatics Network (HEMBA) are important steps toward disseminating adult education. Participants of the training will also be able to participate remotely through this platform, and citizens who are unable to physically attend the course will also be encouraged to participate.

6.2. Family School Project

Extensive research in the field of education has consistently shown that the characteristics of a family have a direct and significant impact on the educational outcomes of students (Center on Education Policy, 2012; Li & Qiu, 2018; Suna et al., 2021). In fact, studies have demonstrated that familial characteristics are associated with student outcomes more strongly than school-related factors (Eriksson et al., 2021; Suna et al., 2021). Several aspects of the student's life are influenced by the characteristics of his or her family. Various

aspects of a student's life, such as their learning process, are profoundly influenced by the opportunities available at home and the attitudes of their families.

Researchers have found that the participation of parents in education has a significant relationship with the educational achievement of their children (McNeal, 2014; Topor et al., 2010). Concretely, a family that shows greater interest in its child's education, supports their learning more and closely monitors their performance has a higher probability of success. In order to participate in educational activities, families must establish a qualified relationship with their children, determine their needs, and possess the competency to provide support to the students. Families must, therefore, have a wide range of skills to effectively participate in the educational process.

MoNE has recognized the important role of families in promoting adult education and enhancing the academic performance of students. In line with this, the "Family School" project has been initiated to encourage families to participate in education and acquire academic and social skills simultaneously. As part of this project, training will focus on family communication management and effective communication, the use of technology, moral development, stress management, healthy nutrition, the environment, and first aid. In addition to these subjects, participants may also receive training in basic literacy skills and basic cognitive skills.

The "Family School" project initiated by MoNE has gained significant momentum, with over 137 thousand families reached during the first month of implementation in seven pilot provinces, and expanding to reach 1 million 110 thousand families across all 81 provinces within a year. This surpassed the initial target of 1 million participants in 81 provinces set for the project. As part of the study, participants are required to complete 56 hours of training in 12 areas, including those previously mentioned. During 2023, MoNE increased its total participation target to 2.5 million to enhance the in-

clusiveness of the project, which has received a great deal of interest from families.

7. Improving the Professional Development of Teachers

Studies conducted in the field of education have revealed that a limited number of factors are associated with educational outcomes, including teacher characteristics (Chatty, Friedman & Rockoff, 2014; Oppen, 2019). Many education systems have revealed relatively strong relationships between student performance and teacher characteristics as a result of large-scale assessments (OECD, 2018b). Since the teacher is responsible for directing the learning process, the influence of teacher characteristics on student performance should be readily apparent. To ensure student success, approaches that will improve teacher characteristics and support their professional development are essential. In many education systems today, teacher training and professional development are among the most important policy areas (OECD, 2018b).

Professional development of teachers takes place primarily in two ways; teacher training before starting the profession (initial teacher trainings) and after entering the profession (in-service trainings) (Boeskens, Nusche & Yurita, 2020). According to studies in the literature, teacher training, regardless of the quality of the training, decreases unless it is accompanied by in-service training tailored to the teacher's needs (Boeskens, Nusche & Yurita, 2020). To maintain teachers' pedagogical skills and field knowledge, quality and inclusiveness of in-service training are essential.

By the end of 2021, MoNE introduced a new approach to in-service training to support teachers' professional development. This approach encompassed both physical participation in trainings and enhanced opportunities for distance education through the establishment of the Teacher Information Network (ÖBA). A major benefit of the new approach is the provision of a budget to schools to meet the training needs of their teachers. MoNE allocated an import-

ant amount of budget to schools for teacher training in 2022. Consequently, school administrations have the authority and budget to determine and meet the training needs of their teachers. Secondly, teachers' opinions were taken into consideration more in determining the topics to be opened within the scope of in-service trainings, and the trainings were enriched according to the feedback of the teachers. Then, all materials developed for teacher professional development were brought together in ÖBA, and its infrastructure was strengthened. As discussed in detail in the next section, participation in the trainings developed for teachers wishing to become specialist teachers and head teachers within the scope of the Teaching Profession Law (ÖMK) has greatly increased the inclusiveness of professional development trainings. Teachers' options for participating in in-service training have been enhanced in this context, which is intended to increase their participation.

MoNE has greatly increased teacher participation in training as a result of its new approach to professional development. Almost all teachers at all levels of the education system have received at least one professional development training. Secondly, the new approach resulted in an increase of 44 hours per teacher in 2021 to 250 hours in 2022 as a result of the new approach. In 2023, MoNE plans to increase the average teaching hours per teacher to 350 hours by continuing to send budgets to schools, enriching ÖBA content, and enhancing the capacity of physical education.

7.1. Enacting an Independent Law for Teaching

Teaching plays a crucial role in society as it encompasses the requisite skills for the profession and has a profound impact on the quality of education (OECD, 2005). As a result, the qualifications of teachers have a direct impact on the educational process and, in turn, on the development of all segments of society. Given the significant role played by the teaching profession, teachers are held in high esteem within society, leading to the emergence of a law that delineates the parameters of the profession. In many policy docu-

ments developed in Türkiye to date (see the Education Council decisions, national development plans, etc.), it has been stressed that a law specific to the teaching profession should be passed to establish the framework of this profession (Özer, 2022a).

The introduction of the Teaching Profession Law (ÖMK), which was prepared by MoNE in 2021, came into effect on February 14, 2022. For the first time in Türkiye, MoNE has defined teaching as a speciality field and separated it from other areas of public responsibility. Teachers' career paths were outlined in the law, as well as the conditions for entry into the profession. A notable feature of the ÖMK is that it recognizes teaching as a viable career path, wherein experienced teachers can attain the titles of "expert teacher" and "head teacher" upon successful completion of training programs, without any quotas limiting the number of eligible candidates. The titles in question are not subject to any quotas, thus, all teachers who wish to apply and meet the criteria may do so. This has resulted in Türkiye becoming one of the countries that have defined and structured the teaching profession as a career path with independent legislation. With the new titles, teachers' rights are also improving significantly, and the "limited development of personal rights from start to retirement" expressed by the OECD is also overcome (Kitchen et al., 2019).

Following the implementation of the ÖMK, approximately 95% of teachers who met the required criteria applied for the position of expert teacher and head teacher. The titles of "expert teacher" and "head teacher" have been awarded to more than 580,000 teachers who have completed the training and passed the exam successfully. In 2023, MoNE has set the goal of extending the scope of this law defining teaching and improving teachers' rights through new regulations in addition to their rights.

7.2. Establishment of An Academy for Managers

The impact of school administrators' leadership behaviors on the quality of educational processes in schools has been widely acknowledged for many years (Dimmock, 1995; Mincu, 2022). School administrators' support for teachers and students, as well as the school of a consistent and safe environment, play a significant role in improving the school climate (Pont, Nusche & Moorman, 2008). In light of this, all stakeholders in education are affected by the behaviors and preferences of school administrators.

In addition to the efforts to enhance the professional development of teachers, MoNE in Türkiye has taken steps to improve the leadership skills of school administrators by establishing the "Administrative Academy" in 2022. In order to improve the leadership skills of school administrators and to disseminate good practice examples in educational administration, this academy has initiated several training programs. School administrators will receive training in 'history, culture, and civilization awareness' following the establishment of the academy. In 2022, 4,000 school administrators have already received training in education history, culture, and civilization through the academy. MoNE has set a goal to ensure the participation of all school administrators in Türkiye in the Administrators Academy trainings by 2023, demonstrating its commitment to advancing the professional development of school administrators in the country.

8. Enhancing Special Education Practices

8.1. Establishing Public Education Centers for Individuals with Disabilities

Lifelong learning is crucial for adults to adapt to evolving life circumstances (Benavot et al., 2022; UNESCO, 2021). To achieve equality of opportunity, the dissemination and inclusiveness of lifelong learning activities to all segments of society are very important (United Nations Economic Commission for Europe, 2010). Particularly, people with disabilities may encounter various disadvantages

and limitations when it comes to accessing adult education (UNESCO Institute for Lifelong Learning, 2020). The ability to overcome these limitations and equip disabled adults with skills contributes significantly to their social integration and employment prospects.

A significant milestone has been achieved with the establishment of "Public Education Centers for Disabled Adults" which cater to people with disabilities aged 18 and above. This program is designed to provide adults with disabilities the opportunity to benefit from the vocational skills development programs offered by public education centers. The centers provide training that takes into account the disabilities of participants as well as their individual needs. Within a year, MoNE ensured that at least one Disabled Public Education Center was operating in each province. Additionally, MoNE has taken proactive measures to facilitate transportation to these centers by offering free transportation services to disabled citizens and their families, which makes it easier for them to access these services. By 2023, MoNE has set a goal to expand the Disabled Public Education Centers to all districts in the country, further promoting opportunities for disabled adults to benefit from vocational skills development programs and enhance their social integration and employment prospects.

8.2. Enhancing Special Education

Education environments play a significant role in influencing students' educational approaches as well as educational performance (Barrett, 2019; Fisher, 2001). Enriched educational environments have been shown to facilitate effective learning and increase student engagement. When students have special educational needs, the quality of the educational environment becomes even more critical (Agarwal, 2020). Therefore, it is imperative that educational environments are structured to meet the unique needs of students with special educational needs and cater to diverse educational requirements. International organizations have also recognized the

importance of educational environments for students with special educational needs (OECD, 2021b).

During 2022, MoNE intended to enhance the special education applications to improve the opportunities it provides to students with disabilities. Standards were established for five skill areas, namely visual arts, music, physical education and sports, sensory and movement development, and gardening and animal care. These five areas were standardized in 2022, and 345 schools for special education practice established 788 skill practice areas. A total of 899 thousand special education materials have been developed and delivered to schools in accordance with the standards for the development of these areas. Using the same approach, MoNE plans to increase the number of skill areas in special education practice schools to 10 by 2023.

8.3. Enhancing the Number of Science and Art Centers

The tradition of implementing special programs for students with higher skills compared to their peers has a long-standing history (Gallagher, 1994; Mitchell & Williams, 1987). Research has shown that gifted students possess unique learning characteristics that differentiate them from their peers (Munro, 1996). This context suggests that identifying gifted students and providing them with additional educational programs that meet their needs has the potential to result in important outcomes.

Science and Art Centers (BILSEMs) have supported gifted students in Türkiye for many years. BILSEMs are institutions with strong infrastructure and a variety of academic and artistic programs that provide additional educational support to students outside of the classroom (Özer, 2021b). In BILSEMs, students receive education in areas where they possess high skills in line with their areas of talent. Teachers nominate students who are believed to have special abilities, and then these students are subjected to cognitive ability tests. The talent/skill commission assesses the potential of prospec-

tive students in the arts. Students who are successful as a result of the evaluations are registered in BILSEMs (Özer, 2021b).

BILSEMs play an important role in the education of gifted students. However, although BILSEM programs have been implemented for many years, the total number of BILSEMs in Türkiye and the number of students supported through BILSEMs seem to be partially limited. For example, there were 61 BILSEMs in Türkiye in the 2010-2011 academic year, with more than 9 thousand students benefiting from these institutions. By the 2019-2020 academic year, the number of BILSEMs increased to 181 and more than 62 thousand students benefited from BILSEMs (Özer, 2021b).

BILSEMs will be disseminated throughout Türkiye as a result of an important decision made by MoNE in 2022. This project intends to increase the number of BILSEMs from 225 by the end of 2021 to 350 and to increase the number of students who will benefit from these institutions. Having made the necessary planning and investments, MoNE reached its target number of 375 BILSEMs exceeding it by 15%. The number of students utilizing these institutions has increased from 67 thousand to over 86 thousand since the prevalence of BILSEMs has increased. As of 2023, MoNE has set a target to establish at least one BILSEM in each district in Türkiye.

8.4. Enhancing the Number and Improvement of Guidance Research Centers

Counseling services offered in schools contribute to student well-being and a positive school climate in many ways (Alexander et al., 2022). Research indicates that psychological counseling services can increase students' engagement and psychological resilience, leading to higher educational success in the long run (Brooks, 2021; Edwards, 1995; Setiawati, 2021). Furthermore, it is also essential to identify students with special educational needs based on the quality of the services provided. A student with special educational needs can only be provided with an educational environment that

meets their own needs when their educational needs are correctly identified. It is the responsibility of Guidance Research Centers (RAMs) in Türkiye to determine and plan the special education needs of students. The RAMs develop plans for providing counseling and guidance to schools in their regions, preparing guidance programs, and identifying and meeting the needs of the region by collaborating with psychological counselors in local schools. RAMs provide psychosocial and psychoeducational services to both parents and students. RAMs provide psychological services based on school psychological counseling processes and assume an important role in identifying and meeting needs in the region under their responsibility.

It is critical to strengthen the staff of RAMs and increase their prevalence in psychological counseling services, given RAMs' important role in these services. As part of these efforts, MoNE has made the necessary arrangements for the appointment of physiotherapists for the first time in these centers. As a result of these arrangements, 260 physiotherapists have been recruited and assigned to RAMs, which will enhance the capacity of RAMs to provide comprehensive and inclusive services to students with special needs.

Another objective of MoNE was to increase the number of RAMs throughout the country. To achieve this goal, psychological counseling services will be strengthened holistically. It is planned to increase the number of RAMs from 243 to 275 by the end of 2022 in order to achieve this goal. MoNE's planning and investments resulted in an increase in RAM to 286 and exceeded the target. By 2023, MoNE aims to increase RAMs to 300 by using a similar approach.

9. The Dissemination of Environmental and Climate Change Awareness

As a consequence of human activities that have destroyed nature, the environment has suffered significant damage. According to the World Economic Forum (WEF), as of 2020, 83% of all mammals and

approximately half of all plants are either extinct or on the brink of extinction. Particularly, the rapid population growth and the increased production to meet the needs of this population, along with changes in consumption habits, have caused the greatest damage to the environment (Roach, Goodwin & Nelson, 2019; WEF, 2020). This situation has been the trigger of climate change today, and the earth has reached the highest temperature values in history. The effects of climate change are now clearly evident. In the last 50 years, disasters due to climate change increased threefold compared to the previous 50 years (United Nations, 2021). The current global problems make it imperative to raise awareness of environmental and climate issues as soon as possible and to spread them to all segments of society. It is for this reason that many countries in the OECD and EU region engage in large-scale projects (ETF, 2022; European Commission, 2019). It is the primary objective of these projects to raise the awareness of nature in education, to gain skills for protecting the environment as defined as 'green skills', and to keep the damage to the environment as low as possible in education and the workplace (ETF, 2022).

The "Environmental 1,000 Schools" project was launched by MoNE in 2022 in order to take an important step in the process of gaining awareness of nature, enabling students to learn by doing and by living, and initiating the Green Transformation from schools. At least one school in each province in Türkiye will undergo the necessary transformations to become an environmentally friendly school as part of this project. Furthermore, rainwater treatment systems were installed in 1,000 schools, and solar panels were installed in schools. The practice of organic farming was carried out in schools with the necessary physical facilities. Moreover, 'zero waste libraries' have been established in these schools. The implementation of all of these measures contributes significantly to the fact that schools consume the least amount of energy and store a variety of natural resources. Through their exposure to nature-sensitive technologies, students studying in these schools directly support energy storage.

In 2022, MoNE took another important step in the curriculum to increase environmental awareness and raise awareness of climate change. MoNE has expanded the scope of the 'environmental education' course at the primary and secondary school levels and rearranged it to 'environmental education and climate change'. As part of the restructuring of the course, issues related to climate change, greenhouse gases, and global warming were included. The course will provide 2 hours of instruction each week, a total of 72 hours of instruction in grades 6th, 7th, and 8th. This curriculum update was achieved through collaborative efforts between the Ministries of Agriculture and Forestry, Energy and Natural Resources, and Environment, Urbanization and Climate Change.

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EDUCATIONAL POLICY ACTIONS BY THE MINISTRY OF NATIONAL EDUCATION IN THE TIMES OF COVID-19*

*Özer, M. (2020). Educational policy actions by the Ministry of National Education in the times of COVID-19. Kastamonu Education Journal, 28(3), 1124-1129.

Since the end of 2019, a coronavirus type has started to threaten the human life in Wuhan (China). Due to the scale of the threat, it is labeled as a “pandemic” by World Health Organization (WHO) in 11th of March. It is the first pandemic announcement by WHO which is caused by a type of coronavirus and WHO warns all local authorities to raise their health emergencies to maximum level (WHO, 2020).

An estimation by UNESCO shows that more than 1,5 billion of students and 63 million of educators are affected by school closures in 188 countries as the date of March 27, 2020 (UNESCO, 2020). Due to uncertainty on schedules, applications for most graduate programs are delayed to a particular time or canceled around the world (OECD, 2020).

At the early stages of pandemic, it is perceived as a matter of public health, however, characteristics of fast contamination and stamina in diverse objects make COVID-19 a more critical issue (Burgess & Sievertsen, 2020). Political authorities begin to take precautions to slow down the velocity of COVID-19 infection (OECD, 2020). Travel bans and social distancing measures were the first steps taken by almost all countries, and these steps are followed with a curfew in some countries.

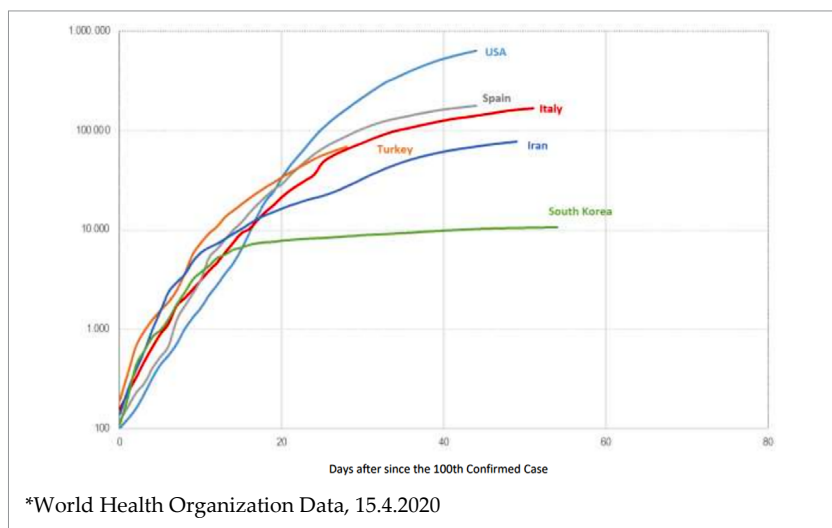
In these circumstances, education was affected greatly as one main daily activity of millions of students, teachers and parents around of the world (ETF, 2020; Hopegood, 2020; OECD, 2020; Saavedra, 2020; UNESCO, 2020). In most countries, schools are closed and education is provided through distance education platforms (ETF, 2020; Reimers, 2020). It is a dilemma for all educational authorities. Because while distance education and other digital solutions are the best way to cope with COVID-19, these methods also bring the risk of increasing educational inequity (Moreno & Gortazar, 2020). Due to the fact that students do not have same level of digital competencies, computers and internet connections, policymakers need to consider these differences between student groups.

In this study, I review the urgent policy responses by MoNE in Türkiye to COVID-19 in different areas, including the alternative online educational portal and other distance education services, production of urgent materials and equipment to prevent the spread of the pandemic, and lastly a new helpline for psychosocial support.

COVID-19 Pandemic in Türkiye

Türkiye kept the threat of COVID-19 out of its borders until 11th of March. Since then, the number of cases has been increasing. As of 15th of April, about one month after announcing the first official COVID-19 case, there are 69,392 known cases, 1,518 deaths and 5,674 recovered patients in Türkiye (Ministry of Health-COVID 19 Database). The changes in the number of COVID-19 positive cases with comparison of some other countries is given in Figure 1. As it is seen in Figure 1, numbers of the cases with COVID-19 positive have yet to reach the expected peak level in Türkiye and have continued to increase with lower ratio. Ministry of Health and its Scientific Council evaluate the situation constantly, and precautionary measures have become stricter with their feedbacks.

Figure 1: The COVID-19 Positive Cases in Iran, Italy, South Korea, Spain, Türkiye and United States*



Since the first stages of COVID-19 pandemic, the Ministry of National Education (MoNE) has maintained the communications with Ministry of Health and its Scientific Council. Considering an education system with approximately 18 millions of students and 1 million teachers, MoNE prioritized the health and well-being of all educational stakeholders, and decided to maintain school closures until the end of April 2020 based on the recommendations of the Scientific Council.

Distance Education

With the school closures, continuing of education via alternative platforms become crucial in Türkiye. Distance education is the key element of MoNE to maintain its services and transmit these services to all educational stakeholders. Within the scope of distance education, MoNE has decided to perform the courses via its online platform-EBA (Educational Informatics Network) and national television channel-TRT (Turkish Radio and Television Corporation). With the collaboration of MoNE and TRT, learning materials for distance education via national channels are prepared in a quite short time.

MoNE selected EBA as the main platform for distance education. EBA is a digital educational portal which is developed by MoNE and it is in service since 2011-2012 academic year. In this portal, various learning materials –including curriculum-based videos, documents, e-books, tests, activities- are provided to stakeholders of education from preschool to high school level. Students, teachers, and parents can access more than 5.000 books, hundred thousands of documentaries, cartoons and documentary in EBA portal. EBA is also a dynamic portal and gives diverse opportunities to students and teachers. Teachers can assign assessment tasks to students via EBA portal. In addition, the portal provides a tool to analyze the academic needs of students using data based on their responses to tasks. In this way, students can reach the materials based on their personal academic needs. Students can also select the topics which

they want to focus on, and they can find the related online courses and assessments. Video recordings of courses can also be prepared and uploaded in EBA.

In EBA portal, distance courses are structured based on school levels. In primary and middle schools, all courses are presented to students between 09.00 and 14.00, and replays of courses are demonstrated between 14.30 and 19.30 with same order. For the students in secondary schools, distance courses are presented between 09.00 and 16.00, and replays of courses are demonstrated between 16.30 and 23.30 with same order.

An example schedule of distance education program from EBA TV is given at Table 1. As seen in Table 1, courses are presented to students in both primary schools, middle and secondary schools daily. At the end of distance education program, a specific program called as “parents’ hour” is also presented. Consequently, EBA become an important educational source for all stakeholders in the times of COVID-19.

Table 1: An Example of Distance Education Program in EBA TV (April 13, 2020)

TIME	PRIMARY SCHOOL (Grade 1 – grade 4)	MIDDLE SCHOOL (Grade 5 – Grade 8)	SECONDARY SCHOOL (Grade 9 – Grade 12)
09.00	Life science -1	Turkish Language -5	Turkish Philology -9
09.30	Mathematics -1	Mathematics -5	Mathematics -9
10.00	Life science -2	Turkish Language -6	Culture of Religion & Ethics -9
10.30	Mathematics -2	Mathematics -6	Turkish Philology -10
11.00	Life science -3	Turkish Language -7	Mathematics -10
11.30	Science -3	Mathematics -7	Turkish Philology -11
12.00	Social sciences -4	Turkish Language -8	Mathematics -11
12.30	Science -4	Mathematics -8	Turkish Philology -12
13.00	<i>*İyep – mathematics</i>	<i>*Arabic Language -5</i>	Mathematics -12
13.30	<i>*Turkish language for adaptation</i>	<i>*Turkish Language for Adaptation</i>	Exercise Hour
14.00	<i>*Info for families</i>	<i>*Life Sciences</i>	<i>*Kuran-ı Kerim</i>
14.30	R- life science -1	R- Turkish Language -5	<i>*Arabic Language – 9</i>
15.00	R- mathematics -1	R- Mathematics -5	<i>*Basic Knowledge of Religion -9</i>
15.30	R- life science -2	R- Turkish Language -6	<i>*Metal Technology -10</i>
16.00	R- mathematics -2	R- Mathematics -6	<i>*Information Technologies- 11</i>

*Selective Course/Course of Academic Support Program/Adaptation Course/Course in Program Type,

R: Replay

Concurrently, all videos are presented to students from television via TRT. Students who do not have internet connection at home can participate the distance education opportunities via television. TV programs are transmitted via three different channels for primary, early secondary and secondary school students.

In pandemic days, it is critical to have a sustainable digital education portal such as EBA and qualified educators who can use the portal. Based on 2018 PISA data, Moreno and Gortazar (2020) show that most school principals think that an effective online learning portal is available in Türkiye and teachers have necessary technical and pedagogical skills to integrate digital devices into the instruction.

EBA Infrastructure is Strengthened

MoNE made investments to strengthen the infrastructure of EBA in order to obtain a sustainable distance education portal. During this distance education period, access frequency of EBA has increased to great extent, and EBA has become one of the most frequently used websites around the world. Between the beginning of March and 12th of April, EBA has been clicked more than 1 billion times, and the number of the access to EBA reached 900 million. EBA maintains the service with its strengthened infrastructure with high-volume of access.

Free Internet Access to Students

MoNE collaborated with the leading GSM operators in Türkiye to support the students' access to the EBA online portal. Operators provided internet access to the students up to 8 GB free of charge. Students can use internet access to participate the online courses and other educational activities at the EBA portal.

Live Courses for Students in 8th Grade and 12th Grade

MoNE provided extra opportunities to support the students who has been preparing for the high-stake examinations in Türkiye. For students who will take High School Entrance Examination (LGS) in

8th grade, and those who will take University Entrance Examination (YKS) in grade, “live courses” via the EBA portal are available now. Accordingly, students can participate interactive courses and get feedback from their teachers. Moreover, MoNE has also started a new broadcasting channel via TRT to support students for these high-stake examinations during weekends.

Revision of the High-School Entrance Examination Content and Automatic Registration of Students

As mentioned above, High School Entrance Examination (LGS) is a high-stake test which is used to assess the academic performance of 8th grade students and place them to high schools based on their choices and performance. In normal conditions, LGS is prepared based on the 8th grade curriculum. Considering the possible inequalities in access to online and distance education, the content of LGS is now limited to only the first semester of 8th grade curriculum. LGS is postponed from June to July. Accordingly, if there would not be any other delay, all 8th grade students could take this multiple-choice test—which has a broad social legitimacy due to its objective assessment.

Due to the limitations as a result of social distancing, MoNE decided to register all students in 8th grade to High School Entrance Examination (LGS) automatically. Therefore, students and parents do not need to go to school, register themselves or confirm the registration to take examination. Considering the number of students who take the exam, this regulation is quite important to keep social distance.

Supporting the Professional Development of Teachers via Distance Education

MoNE has prepared a professional development program for teachers in collaboration with UNESCO. To support the professional skills of teachers, 17 programs which focus on the diverse topics, were prepared and presented to teachers via distance education.

Approximately, 125.000 teachers will participate the professional development programs during school closure period.

Supporting the Psychological Resilience and Well-being of Students and Parents

Social distancing and other limitations due to COVID-19 may cause negative psychological conditions such as anxiety and fear, and these may affect the well-being of students and parents. Along with the distance education, MoNE aims to support the psychological resilience of students and parents. To maintain the emotional health of students and parents, MoNE prepared psychosocial guides and shared them with the public. In these guides, students and parents are informed about the effects of COVID-19, and suggestions for parents to support their children's well-being are provided. Considering the differences in target groups, guides are presented in three versions: For families, adults, and youth.

Additionally, MoNE established a helpline for psychosocial support of students and parents. Psychological counselors from the General Directorate of Special Education and Guidance response the calls and help the students and parents to cope with undesirable effects of COVID-19. In all provinces of Türkiye, 1,375 experts in Guidance and Research Centers (RAMs) are assigned for the supporting of psychological resilience of students and parents. This is the first comprehensive project by MoNE where students and parents can directly communicate with experts in all provinces of Türkiye.

Students who need special education can be more vulnerable in times of crisis due to their special needs (ECW, 2020). For the students in special education, videos of specific courses and activities are prepared, and uploaded to the EBA portal. Educational materials with sign language support for students in special education are also added to the EBA portal. For the special education students and students with lower level of autism, more than 400 educational activities are prepared in diverse disciplines.

In cooperation with non-governmental institutions and foundations for disabled people, MoNE also prepared videos which focus on the self-care and fundamental skills of students. Additionally, for the students with diverse levels of autism, 19 educational programs have been updated. Lastly, a mobile application (I am Special, I am at Home) has been developed and it is now available for special education students.

Increasing the Production Capacity of Vocational Education and Training

VET has been on the hot debated agenda of education systems for years (Özer and Perc, 2020). Especially, after widespread use of automations in the production and service sectors supported by artificial intelligence technologies, this debate has been dramatically increased in terms of the new skill demands in labor market (Perc et al., 2019). MoNE has conducted multidimensional projects to improve VET in Türkiye after declaring the Education Vision 2023 (Özer, 2018). These projects increased the both quality of VET and production capacity of vocational and technical Anatolian schools (VTAHs). Many chronic problems have been eased since then (Özer, 2018; Özer, 2019a; Özer, 2019b; Özer and Suna, 2019; Özer and Suna, 2020). With the increasing education- production capacity in VET, VET has become one of the main source of production for the needs of society during the initial shocks of COVID-19 crisis (Özer, 2020). VET has an important potential to adapt its power in production towards the urgent needs, and its adaptation ability makes VET an important source in times of crisis.

MoNE made necessary investment on the pilot VTAHs for the production and positive outputs are obtained in a short while (Özer, 2020). In this context, up to now, VTAHs reached at production capacities of 10 million of medical masks per month, cleaning material needs of all schools of about 54 thousand and the cleaning material needs of public institutions, one million face protection shields per month and one million disposable gowns and overalls per month.

MoNE has also spent a great effort on research&development (R&D) studies to increase the production capacity and in VET. MoNE constructed R&D centers within VTAHs to produce different biomedical instruments such as mask machine and respiratory equipment. After one month efforts, both “3-Layer Wire Ultrasonic Surgical Mask Machine” and respiratory equipment have been produced.

Discussion and Conclusion

COVID-19 is a major problem all around the world, and the scale of the issue forces the governmental authorities to take strict precautions. As a result of these precautions, students and educators are highly affected by the COVID-19 pandemic. Due to social distancing measures, schools are closed instantly in many countries and countries strive for sustaining the educational services in these extreme conditions.

Due to high spreading of COVID-19 in Türkiye, MoNE has decided to close the schools starting from March 17, 2020 until the end of April 2020 with the coordination of the Ministry of Health and its Science Council. With the prioritization of health and welfare of society, it is decided that all education will continue via distance education. Distance education is provided via the EBA portal as well as national TV channels. For TV broadcasting, MoNE collaborated with TRT and now broadcast educational materials through the three national television channels. Therefore, in COVID-19 pandemic period, students can participate the distance education via both online portal and television.

MoNE taken important steps to support the students in academic and social way in pandemic period. First, the infrastructure of EBA portal is strengthened to sustain distance education. As expected, EBA has become one of the digital education portals with highest members around the world. In order to increase the accessibility, MoNE collaborated with the main GSM operators in Türkiye. Within the scope of protocols, students can access to internet up to 8GB

free of charge. EBA has also been used for the professional development of teachers in pandemic period. In-service development program of teachers is also adapted to distance education.

To support the students who will take the High School Entrance Examination (LGS) in 8th grade, and University Entrance Examination (YKS) in 12th grade, MoNE established “live courses” practice in EBA portal.

MoNE has given much importance to improve the VET in Türkiye since the announcement of Education Vision 2023. After implementing multidimensional projects to improve the quality of VET, it become an important actor for getting out of initial shock of COVID-19 by producing urgent materials in Türkiye. In the initial phase of pandemic days, VET has contributed greatly to the production of the materials which are hard to find nowadays (Özer, 2020). Cleaning material needs of the 54.000 schools around the Türkiye has met by the productions of VTAHs. R&D studies in VET accelerated, and machines for production of surgery masks and masks with N95 standard, and disposable materials are manufactured. Therefore, VTAHs have reached to capacity of 10 million masks and one million face protection shields monthly. Additionally, cleaning materials, masks, and face protection shields are shared with elderly people and those who need within a social service project in VET.

Due to the restrictions in social life and staying at home, people can feel anxious, scared or have negative emotions in pandemic periods. MoNE established a helpline to support the psychological resilience of students and parents. This is the first comprehensive project by MoNE which students and parents can directly integrate with counselors via telephone. Additionally, guides for families, adults and youth have been prepared to support people to cope with the effects of COVID-19.

For the participation of students in special education to the distance education, specific materials have been added to EBA portal. Number of the learning materials with sign language support have been increased, and new materials will also be added. New mobile applications are prepared to update students and parents about the developments in special education.

In conclusion, MoNE uses all its potential to sustain education and to cope with the negative impacts of COVID-19 pandemic. As it is mentioned in this study, it is quite important to support all educational stakeholders in academic and social dimensions. The effects of COVID-19 created a challenge for all educational administrations across the world. Ensuring that all students have access to the distance education and other opportunities is crucial for educational authorities.

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THE RELATIONSHIP BETWEEN CULTURAL POWER AND EDUCATION IN LIGHT OF THE DEVELOPMENT OF EDUCATION IN TÜRKİYE OVER THE LAST TWO DECADES*

*Özer, M. (2022). The relationship between cultural power and education in light of the development of education in Türkiye over the last two decades. *Insight Türkiye*, 24, 3.

Mass education emerged globally in the early 19th century and expanded in the aftermath of World War II to include higher education. Many nations, starting with the United States and the Western European countries, made it easier for all their citizens to access education, while implementing new, large-scale projects to improve their society's overall level of education. By the 1970s, mass education had spread to higher education in those countries; the enrollment rate in primary education neared 100 percent, and the process of universalization enabled more than half of the entire population to access higher education.

The driving force behind this expansion was the realization that human capital is the most powerful, long-term resource available to any given country. Increasing the average number of years of schooling per member of society not only contributes to their employability and increases their adult skills, it empowers them to make greater contributions to their nation's development. Accordingly, investing in human capital makes a significant impact on economic development as well as social peace and welfare.

Since the Republic of Türkiye's foundation, increasing the schooling rate has been among the stated priorities of almost every government. Significant progress has been made on that front, especially at the level of primary education. It is important to acknowledge, however, that Türkiye lagged behind the Organization for Economic Co-operation and Development (OECD) countries, in particular, by the early 2000s in terms of massification and universalization in education. Whereas many OECD countries had largely completed the process of universalization by the 1950s and thus began to prioritize the quality of education, Türkiye did not initiate universalization until much later. Accordingly, various large-scale projects have taken place since 2002 to promote massification in education and ensure that Türkiye could compete with other OECD states in that area.

From 2002-2022, Türkiye made significant progress with regard to almost all educational indicators. Due to the long-standing problems impeding access to education at all levels except primary, the country initially concentrated on improving access to education. Accordingly, additional schools and classrooms were built, prioritizing those provinces and regions where the schooling rate was relatively low. At that point, Türkiye dared to tackle the root causes of the problem, making investments nationwide rather than only in specific parts of the country. Consequently, those provinces and regions that had once suffered from schooling-related problems ended up on par with the rest. Massification in education thus occurred homogenously across the nation.

Improving access to education in a large-scale education system, as in the case of Türkiye, requires significant investment. That is why the Turkish governments made a massive investment to increase the number of schools and classrooms to oversee that transformation. It was also important for those investments to be managed in such a way that they would promote balanced growth. The investments Türkiye made at the time resulted in significant improvements; the government prioritized disadvantaged areas to bridge, rather than deepen the existing gaps. Those investments began to yield results within a rather short amount of time (Özer, 2022a). Accordingly, there was a notable increase in the schooling rate for all levels, from pre-school to higher education. For example, the pre-school enrollment rate for 5-year-old children increased from approximately 11 percent in the 2000s to 93% percent today. During the same period, the schooling rate at the middle school level soared from 44 percent to 90 percent (Özer, 2022b).

It is possible to better appreciate the positive impact of those improvements by taking a closer look at how the schooling rate changed at the provincial and regional levels. Thanks to the governments' investments, the schooling rate in many provinces that had been relatively low in the early 2000s surpassed the national av-

erage (Özer, 2022a). Importantly, the gap between various regions within the country has been alleviated significantly. Those provinces in which the schooling rate was the lowest in 2000 witnessed an increase in those numbers, which eventually reached the same level as those provinces with the highest levels of enrollment.

In addition to the investments that Türkiye made at the time, systemic regulations played a significant role in the country's progress. Among other things, the decision to increase mandatory education from eight to twelve years strongly influenced the improvement in the schooling rate. Likewise, the country made notable progress vis-à-vis the schooling rate at the level of higher education. Compared to approximately 14 percent in 2002, the higher education schooling rate has increased to roughly 44 percent today.

As Türkiye began to reach its massification goals, it revisited its objectives and started concentrating on improving quality indicators. As the number of students continued to increase at all levels of education, it attached special importance to two priorities (Özer, 2021a): keeping the average number of students per classroom low and moving the average number of students per teacher closer to the OECD average. Taking stock of the country's progress today, it is possible to say that both goals have nearly been reached. Whereas the total number of classrooms increased from approximately 300,000 to some 850,000 during the past two decades, the number of students taking classes in 56 percent –more than half– of those classrooms remains under twenty-five. At the same time, the country has constantly worked to hire a large number of teachers in an attempt to lower the average number of students per teacher. Hence the increase in the total number of teachers from approximately 500,000 in the 2000s to nearly 1.2 million today. Thanks to this investment in particular, the student/teacher ratio at all levels of education in Türkiye has moved closer to the OECD average.

Democratization in Education

The last two decades have been critically important for both massification and democratization in education. During this period, Türkiye ended long-standing, anti-democratic practices and began to take into consideration the people's demands. It is a well-known fact that educational systems are responsible for helping students gain necessary, up-to-date skills, and for responding to contemporary demands. As such, Türkiye began to pay more attention to society's expectations from education as it took steps to promote massification. In retrospect, the past twenty years represent a turning point for the country's education system. It is particularly important to underscore that the process of massification in education benefited socio-economically disadvantaged social groups more than the general population. Accordingly, that period is significant both in terms of ensuring equality of opportunity in education and improving the democratization of education.

One of the most significant improvements occurred in the schooling rate among girls. The long-standing problems facing girls' enrollment in school were addressed within the same time frame, and the gender gap shrank, especially over the last decade. In many provinces where girls had been notably less likely to go to school than boys in the early 2000s, the schooling rate for girls came to surpass the schooling rate among boys (Özer, 2022a). Indeed, the available data indicate that the schooling rate for girls has significantly increased at all levels of education. For example, the schooling rate at the level of higher education was 22.4 percent for males and 19.7 percent for females between the ages of 18 and 22 in 2007. Those numbers currently stand at 40.5 percent for males and 46.3 percent for females. In other words, the schooling rate for girls reached the same level as the schooling rate for boys –and even surpassed it at the level of higher education– for the first time during this period.

Over the last twenty years, Türkiye has repaired the damage that the social engineering projects of the previous decades had inflicted

ed on society through education policy. Among those damaging policy decisions was the ban on the religious headscarf. Ironically, the public authorities of the time complained that girls could not be incorporated into the education system sufficiently –while imposing a ban on the headscarf to deny access to the female children of religious citizens. It is a well-known fact that Turkish women faced many challenges in their attempts to overcome that ban, especially in higher education, and many who had the financial means to do so relocated to other countries. The authorities who implemented such policies were not only unimpressed by such dramatic stories, they failed to recognize the role of their restrictions within the context of violence against women and brain drain. Ultimately, Türkiye abolished the headscarf ban, arguably the single greatest obstacle to education, in 2013 and took the additional step of lifting related restrictions on the employment of women –a remarkable accomplishment for women’s socialization.

Another project for structuring the society had imposed restrictions on the access to higher education by high school graduates who had studied religious instruction or completed vocational schools. The coefficient regulation decreases significantly the scores of students in vocational high schools and İmam Hatip high schools when they apply for the higher education programs. That practice, which dated back to 1999, functioned to discourage successful students, who could pursue higher education, from attending the İmam Hatip and vocational schools. Consequently, academically high-performing students mostly ignored both types of high schools, leaving these schools with an increasingly homogenous group of students who lacked academic merit and/or could not get into any other school.

Remaining in effect for more than a decade, that regulation not only prevented those students who could potentially pursue higher education from receiving religious instruction, it inflicted severe damage to vocational education, which came with a heavy price tag for the labor market. That policy, which the authorities persistently im-

plemented for long years, changed society's perception of vocational and İmam Hatip high schools. In this sense, there was a deliberate attempt to determine how society viewed certain institutions in addition to the choices that students made in secondary education. The negative impact of that measure, which the authorities considered education policy, was not confined to the education system. The labor market, too, had to endure the consequences of a disruption in the natural flow of students, as the inability to find employees with the necessary qualifications took a toll on Türkiye's economic development (Özer, 2021b). That practice, which undermined the balance of both types of high schools, ended after many attempts in 2012. Meanwhile, it became possible for students enrolled in other types of high schools to take elective courses on the Qur'an, the Life of Prophet Muhammad and religious knowledge. Accordingly, the Turkish government addressed an important, popular demand by making such courses available to students.

Discussion and Conclusion

In retrospect, it is perfectly clear that it would not have been possible to discuss the quality of education today had it not been for the massive investments made in the 2000s, since major investments geared toward massification would still have been at the top of Türkiye's education agenda. In other words, it is important to highlight that all of those investments and quantitative improvements laid the groundwork for enhancing the quality of education in Türkiye.

It is crucial to note that Türkiye did not achieve massification in education at the expense of quality. Quite the contrary: there has been steady progress in both massification and the quality of education. Initiatives like the Program for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS), which track the performance of international students periodically, confirm that Türkiye has steadily improved its performance against the backdrop of its massification process (Özer, 2021a, 2022a).

The contemporary debate on education quality ignores an important aspect. Quality is about a certain process. It is important to recall that those educational institutions that are considered high quality today originated from rather humble beginnings and became institutionalized over time. What matters is to nurture each humble beginning with a focus on quality and a culture of constant improvement. The expansion or establishment of new institutions is not inherently problematic for the quality.

Why, then, did Türkiye have to wait until the 2000s to oversee the transformation in education that occurred over the last two decades? Given that those OECD countries which we considered good examples and are now competing against increased their schooling rates at almost all levels to more than 90 percent after WWII and proceeded to focus on new projects to further improve the quality of their human capital, why did Türkiye experience such a delay? Why was 'quality' touted as the supposed reason behind that delay? Since other countries had various natural resources and Türkiye's primary resource has always been its human capital, did the authorities fail to predict that such a delay would be extremely costly? In truth, the answers to all these questions relate to the democratization of education that has taken place over the last twenty years. It is possible to argue that the debates over massification and the quality of education in Türkiye are not actually related to quality at all, but covertly serve another purpose. Put simply, the country appears to have intended to make access to education conditional, rather than unconditional, and implemented that plan through various engineering projects until the 2000s. The headscarf ban and the use of coefficients, which hindered access to education, were among the mechanisms of that design.

The relationship between education and cultural power/hegemony has been the subject of debate for a long time (Borg, Buttigieg & Mayo, 2011). In Türkiye, the difference between being in power and exercising cultural power come up frequently. An oft-ignored point,

however, is that the path to cultural power goes through education and, accordingly, any obstacle that bars access to education is intended to stop cultural power from changing hands. First and foremost, the Turkish authorities made no special attempt to increase the schooling rate before 2002 in order to perpetuate their hold on the existing cultural power. In other words, the massification of education was delayed, under the pretense of preserving quality, to prevent or delay the emergence of co-holders of cultural power and a shift in discourse. The use of coefficients, which aimed to push young people who could potentially access higher education away from the İmam Hatip schools, too, was directly related to cultural power. By taking that step, the authorities attempted to prevent individuals who would join the labor force and the civil service as college graduates from receiving religious instruction.

The use of coefficients against vocational education also created and worsened sociological division, as children born into socio-economically disadvantaged families were channeled into vocational training to limit their upward mobility and perpetuate their disadvantages (Özer & Perc, 2020). In this regard, as Bourdieu stresses, education was made to serve as a mechanism that promoted and sustained social stratification (Bourdieu, 1973).

It is a well-known fact that education systems lay the groundwork for the cultural and social capital of cultural power and, accordingly, ensure the reproduction and continuity of social classes (Bourdieu, 1990). It would be suitable to argue that, taken as a whole, each of the various steps that Türkiye has taken in education over the last two decades disrupted the cycle of reproduction established in previous decades, which had perpetuated the lack of equal opportunity and made the (dis)advantaged more and more (dis)advantaged. The steps taken between 2002-2022 constitute a rupture that resulted in the existing cultural powerholders' loss of their advantage. As such, the transformation that occurred in the field of education over the last twenty years not only improved the quality of Türkiye's human capital but also marked the beginning of a new cultural era.

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The current period is referred as the age of major social and technological transformations. The multi-dimensional transformation, on the one hand, provides great rewards and substantial opportunities for humanity, and on the other hand, leads new and unique problems for societies. Thus, authorities declare that they should take remarkable steps to adapt, and even manage the transformation.

Education is the most important resource that we have to adapt and circulate this transformation, and prepare the society for change. Education systems, with their potential to reach all segments of society, are in a key position for an effective transformation. Therefore, the performance of education systems has become more important than ever in order for the society to adopt the benefits of transformation.

Türkiye has been making significant transformations in many components of its education system since the early 2000s. The essence of this transformation is the universalization of education to cover all segments of society, and the designing of a more egalitarian education system. In this book, Mahmut Özer and H. Eren Suna probe the new educational policies and their initial outcomes between 2018 and the first half 2023, when the educational transformation in Türkiye accelerated, through a lens of published academic studies.