EDUCATION, SOCIAL, HEALTH AND POLITICAL DEVELOPMENTS IN TURKEY BETWEEN 2000 -2020

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FOREWORD

It is a known fact that many changes and developments have taken place in Turkey from the beginning of the 2000s to the 2020s. Along with the economic crisis, there have been many changes in the field of education.

The changes in the countries in line with the developments in science and technology experienced around the world and the globalization process have changed the needs of the societies and have revealed the need for a society that constantly renews itself and has made acquiring new information a way of life in order to meet these needs. Recently, there have been important developments in the scope of access to education in Turkey. It has been tried to eliminate the inequality between regions and genders by enabling more children to meet with school at all levels of education. Improvements in the standards of education services provided to children have been achieved with the developments in the basic inputs of education such as teacher employment, classroom construction, and curriculum updates. However, at this point, the results of national and international evaluation studies reveal that the desired improvement in the quality of the Turkish education system has not been experienced. In other words, despite the quantitative improvement in our education system, qualitative problems are observed.

In this book; we produce information, policies and strategies in the fields that Turkey needs, conduct research to guide decision makers, and we think that it will contribute to the formation of the necessary knowledge for the future. In this direction, we have completed our work that includes many studies in the fields of education, current political developments, civil society, law, health and management. Today, it is of greater importance to work with a sound thought on issues that concern humanity. We have made an effort to shed light on the knowledge and experience we have created by conducting research in areas of strategic importance for today and the future. We think that the fields of education, economy, law and civil society are important indicators of the welfare and development level of a society and it is important to monitor and evaluate these fields annually. While laws are being enacted and plans are being made, it is aimed to produce data-based realistic information and contribute to policy making processes at the point of transforming the collected data on these areas into usable information. We hope that this book, which consists of 21 chapters with the contribution of valuable scientists, will be useful to all readers.

This book; Our esteemed teacher, who passed away as a result of a relentless illness while he was a faculty member at Süleyman Demirel University, Faculty of Education, Department of Turkish and Social Sciences Education in 28 December 2020, Dedicated to **Prof. Dr. Mehmet KÖÇER.**

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Chapter 1

PLAY IN EARLY CHILDHOOD

PLAY IN EARLY CHILDHOOD

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INRODUCTION

Preschool period, which is called the magic years of life by most scientists, is a period that has no tolerance for neglect compared to other periods of life. The damages of this period, in which development is the fastest after prenatal, are permanent and life-directing. One of the most dominant features of this period is the use of the play as the most basic learning tool. When the findings of Developmental Psychology, Educational Psychology and Learning Psychology are examined, it is seen that the most important occupation of the child in this period is play (Koçyiğit, Tuğluk & Kök, 2007). As Montaigne stated centuries ago, "For truly it is to be noted, that children's plays are not sports, and should be deemed as their most serious actions." (Yörükoğlu, 2011). Montessori (1870–1952) also described play as a child's work (Burgaz-Uskan & Bozkuş, 2019).

Play is an important emotional need for the child. According to Önder the child's need for play is seen as important, even vital, as his need for food, love and shelter (Önder, 2016). Yörükoğlu (2011) states that play is the second most important spiritual nutrient after love for the development of the child and gaining personality. Just like a childhood without love, a childhood without playing is unimaginable. If love is considered as the fertile soil of human babies, it would not be wrong to say that play is its light and water.

Play has a different importance in every period of life, especially in early childhood. There are types of plays that individuals of all age groups enjoy playing or being a spectator of. It is known that in early childhood, children mostly like to have an active role in play and they want to turn their every experience into a play. However, what makes the play different from other periods in this period is that children use playing as a tool to understand and make sense of life (Aksoy & Dere-Çiftçi, 2020). Play offers children a unique opportunity in the process of understanding and making sense of themselves and the World (Bulut & Kılıçaslan, 2009; Kurt & Tortamış-Özkaya, 2015). At the same time, play is an activity that expresses how children interpret the world. Play provides an opportunity for adults interacting with children to understand how children perceive and interpret the world. It is because play is the child's language and the most effective expression tool (Filliozat, 2020; Yörükoğlu, 2011). Children express themselves in the easiest and most direct way through play (Koçyiğit et al., 2007). Plays reflect the inner world of the child as it is (Erdal & Erdal, 2003).

There are many ways to communicate with children and enter their world. Play is the most effective and easiest one of these ways. The most effective way to communicate especially with children who have difficulties in communicating with adults and their friends is to start a play and enter the same world with the child instead of saying let's play with you. There is no child who would not want to enter this world. Child removes all the walls in this world and expresses his/her inner world and frees his/her emotions.

All these experiences that children experience while perceiving the world and themselves are actually plays for them. It is also a tool to satisfy the feelings of curiosity. It is entirely at the child's own initiative to do this. It is an action that starts when he wants and ends when he wants. Many actions taken until the goal is achieved, on the one hand, prepare the child for the world (Çalışandemir, 2016).

Play and Definition

Play is the freedom of the child (Yörükoğlu, 2011). For children, play is the bridge between the real world and the imaginary world (Yavuzer, 2005). Play is a way of solving problems, experiencing roles in life, socializing and throwing away excess energy (Yavuz, 2016). Play is the most basic learning tool in early childhood (Solter, 2020). Play is the "original and flexible" actions that the child does freely and spontaneously, sometimes with a purpose and sometimes without a purpose. Play is the most indispensable pursuit for the child who emerges in natural and structured environments to make life safe, meaningful and enjoyable. Play is a universal and contextual process. Play is also a situation, a goal, and an action. In other words, play is a complex human behavior. Play contains many behavioral patterns, it constantly changes, develops, that is, it is dynamic (Tuğrul, 2010; 2016).

When the views of important thinkers of play are examined in the historical process, according to Aristotle (384-322 BC), play is a conscious activity and a preparation for life. However, play should neither be too tiring nor devoid of thought (Adak-Özdemir & Koçyiğit, 2019).

Plato (427-347 BC) emphasized that the child should grow up with play. He suggested that physical education and spiritual education should be done together in the education of each child. Plato stated that it would be harmful for the adult to prevent the child excessively and that play had an important place in the discovery of children's abilities (Koçyiğit et al., 2007).

Ibn Sina (980-1037) defined play as a need for the child and stated that this need should be met in the best way. He also saw play as an important tool for the socialization of the child (Bardak & Topaç, 2019).

Gazali (1058-1111), emphasizing the importance of play in children's education, argued that play relaxes the child, renews his/her memory and increases his/her learning power (Seyrek & Sun, 2005; Adak-Özdemir & Koçyiğit, 2019). He also said that play is the most appropriate way to keep the child vigorous and fit (Koçyiğit et al., 2007).

Luther (1483-1546) opposed physical education hostility in medieval monastic schools and stated that “The body will develop healthier with playing” (Kaya, 2021).

According to Comenius (1592-1670), play is an important learning tool. Play also has an important role in gaining discipline and order (Ramazan, 2013).

Locke (1632-1704) defined play as an instinctive activity and stated that play should be used in childhood in order to make the lessons more attractive (Bardak & Topaç, 2019).

Pestalozzi (1746-1827) stated that there is a power within the child that pushes him/her to play and directs him to action, and that with this power the child cannot stand still and constantly fidgets. He stated that all the plays of the child are joint exercises and named these exercises as "elementary gymnastics" (Kaya, 2021; Pehlivan, 2014). Pestalozzi said, “Stop doing language work inside while the birds are chirping and the worm is roaming on the leaf, because the bird and the worm will be able to teach what you want to teach more easily” (Tuğrul, 2016).

Froebel (1782-1852) described play as the core of life and defined it as activities that reveal the most beautiful and positive aspects of the individual (Bardak & Topaç, 2019). According to Frobel, the child has an intrinsic motivation towards play, so there is no need for adult encouragement. Adult intervention disrupts this naturalness, negatively affects the child's play behavior (Ramazan, 2013). Froebel said, “Play itself is a total achievement, so whatever you are going to teach, teach it in the play environment where the child is the liveliest” (Tuğrul, 2016).

Quantilianus argued that the first education to be given to the child should be in the form of plays (Ramazan, 2013).

Montessori (1870–1952) also described play as a child's work (Burgaz-Uskan & Bozkuş, 2019).

According to Piaget (1896-1980), play is a mirror of the mental development of the child. However, play does not only remain as a mirror, but also plays an active role in the mental, physical and emotional development of the child (Egemen, Yılmaz & Akil, 2004).

Lazarus, on the other hand, defined play as an activity that arises spontaneously, has no goal and brings happiness (Burgaz-Uskan & Bozkuş, 2019).

Einstein emphasized the importance of play by saying "Play seems to be the essential feature in productive thought." (Golinkoff, Pasek & Eyer, 2017).

Although it is very difficult to make a common definition of play, the common point of all definitions is that play is necessary and important for the development of the child (Tuğrul, 2016). Additionally, play is the child's mother tongue, spiritual nourishment, most serious occupation, area of expertise, means of discovering himself and the world, the power of childhood and the language of learning.

Play and child are two concepts that complement each other. Child evokes playing in the mind of the person, and playing reminds the child. It is not possible to consider these two separately. Even while babies are sucking on their mother's breast, they attempt to play with the mother. This makes us think that childhood is play in nature, and play is instinctive. In this respect, it shows the pointlessness of discussing whether play is necessary for the development of the child.

THEORIES OF PLAY

Play theories are divided into two groups as classical and modern theories.

Classical Theories

Classical theories that are based on philosophical speculation rather than empirical research emerged in the second half of the 19th century and the beginning of the 20th century. Classical play theories were concerned with why the play was played and focused on the physical and instinctive aspects of the play. They were not interested in the form and content of the play. In classical play theories, opposing views have been put forward on the function of playing. These theories have been summarised separately under the titles.

Surplus Energy Theory

This theory, put forward by Herbert Spencer (1820-1903), argues that from an adult perspective, people start their day with a renewed energy every day and this energy must be spent. This theory assumes that the energy in the organism is spent through purposeful or purposeless activities, that is, through play. Humans have excess energy that is not necessary for life. Play is due to unnecessary energy left over after primary needs are met. Excess energy is discharged through play. Unspent energy can cause many problems, especially mental problems, in the individual. The child needs to spend this extra energy through play. Children use play to discharge their excess energy by having a pleasant time and at the same time performing various learnings. In other words, the child both discharges his excess energy and realizes enjoyable learning through play. From this point of view, it can be said that playing has an important contribution to the energy balance

in the body, both physically and mentally. There is a need for healthy societies formed by individuals who use their energy in a balanced way from an early age. Based on this theory, the emergence of small or large communities in which all individuals are healthy can be realized with the play of each individual, whether child or adult. The surplus energy theory does not favor the view that the act of playing should be done haphazardly and at desired times. Instead, as in the relaxation/recreation theory, it is emphasized that the time allocated to work and the time allocated to play should be determined in this theory. He argues that it is appropriate for children to discharge their excess energy, which they cannot spend during the lesson, not at any time they want during the lesson or outside the lesson, but during the playtimes (breakdown) placed between lessons (Bardak & Topaç, 2019; Evans & Pellegrini 1997; Kaya, 2021; Koçyiğit et al., 2007; Rubin, Fein & Vandenberg, 1983; Sevinç, 2005).

According to Spencer, unlike animals, human babies do not have to meet their needs in order to survive, so they have more energy and this excess energy creates tension in children. In order for children to regain a healthy balance, they need to spend their energy by jumping, climbing, running, etc. In addition, in his theory, Spencer argued that such behaviors contain an instinctive content transmitted evolutionarily.

Another important point Spencer emphasizes in his theory is the relationship between art and play. Spencer argued that play lies in the source of art and art is a form of play.

This recreation theory of play enables children to get ready to return to the important work of academic learning. These theories view outdoor play as an essential component to academic learning, not as an important activity in its own right (Mabagala & Libent-Mabagala, 2012).

Relaxation/Recreation Theory

In this theory, which was put forward by the German poet Moriltz Lazarus, he argues that, contrary to the theory of excess energy, children need to play in order to collect the energy they spend and to relieve their fatigue. In other words, when the energy of the organism decreases, the play is played to increase the energy. Play is the child's means of finding life (Öztürk-Aynal, 2010; Ramazan, 2013).

According to this theory, exhausting activities in daily life cause children to wear out both physically and mentally. Children feel the need for rest and sleep after strenuous activities. However, sleep and rest are not enough for the organism to regain energy and revive it. Playing, which is the opposite of working, is needed to eliminate energy loss. In other words, play is an activity made out of necessity rather than an arbitrary activity.

İn summary through play, children gather their energy and become mentally active again. For this reason, children should berelaxed by playing plays, especially after mentally exhausting activities.

Recapitulation Theory

This theory, which was developed by the American psychologist Stanley Hall (1884-1924), argues that the cultural stages in the evolution of human beings appear in the play parallelly with the development of the child (Duman, 2010). According to this theory, children repeat their race-specific experiences in play. The child plays plays in order to maintain his/her essence in an evolutionary process; in his/her plays he/she relives the inherited history of his/her ancestors, that is, the prehistoric life of his/her own kind and the interests and pursuits of primitive man; repeats his/her own race-specific life experiences (Adak-Özdemir & Koçyiğit, 2019). In fact, children imitate their ancestors' actions for survival in the past, such as hunting, fighting, finding shelter, etc. through physical activities such as running, hiding, catching, climbing, etc.

According to this theory, children progress from simple behaviors they do through play to more complex and advanced behaviors (Adak-Özdemir & Koçyiğit, 2019; Tuğrul, 2016).

Pre-Exercise Theory

According to this theory, developed by the philosopher Karl Gross, the knowledge and skills necessary for life are first acquired in the play. For this reason, playing has the role of an 'exercise' for the child to learn the rules of life and to do the activities necessary for life. In other words, child prepares for his/her future life, roles and responsibilities by playing from infancy. Gross explained his/her idea with the words “the child explores how to live as an adult through play and finds the opportunity to practice them.” (Ramazan, 2013).

According to Gros, this applies not only to human babies, but also to animals. Animal cubs prepare for life through play. For example, cats rehearse to catch mice by playing with round objects, running after the object.

According to this theory, play is not an aimless, insignificant behavior, but a serious behavior with a biological purpose, a preliminary preparation for future work and life.

According to Tuğrul (2016), children transform their observations into actions by using their imitation skills through the plays they play. Among these actions, the most important imitations are to revive the people they interact with in their immediate environment. With these imitations, children prepare themselves for the future.

Children can be mothers, fathers, doctors, teachers, firefighters, etc. They get ready for their adult roles by playing the roles. They find the opportunity to learn the behaviors required by these professions through pretend play.

Modern Play Theories

Modern play theories emphasize that children find a way to express themselves by using their imaginations and that children meet their wishes by playing (Duman, 2010). Modern play theories are divided into psychoanalytic theories and cognitive theories.

Psychoanalytic theories

Psychoanalytic theories, which are among the modern play theories, try to explain the developmental stages of the child by revealing their psychological needs (Duman, 2010; Tuğrul, 2016). Among these theories, Sigmund Freud's theory of personality development and Eric Erikson's psycho-social development theory come to the fore.

Personality theory (Sigmund Freud)

According to Freud, one of the leading psychoanalytic theorists, play is an environment that children encounter during their personality development from birth to the age of six, where they can directly experience their negative emotions and concerns (Duman, 2010). Freud emphasizes the effect of play on children's emotional development and the importance of play in eliminating negative emotions that arise as a result of traumatic events (Uğurel & Molalı, 2008). Freud's view that the child's subconscious emotions can be revealed from his/her behavior during the play has brought the "play therapy" method (Öztürk-Aynal, 2010). Freud said that every behavior has a reason. Children's plays do not occur randomly or by chance, and they state the feelings that the individual is aware of or not. Children's emotions and desires emerge in uncontrolled play, dreams and fantasies. The child is able to distinguish reality from play. But his/her play is used to create a unique world from objects and events of the real world. Play can help children reduce feelings of fear and vulnerability. It can help children to reflect their feelings such as fear, hatred, anger to others or objects in the play, to reduce negative feelings. Through play, the child gets rid of the obstacles and the prohibitions of the real world and performs unacceptable and aggressive behaviors in a safe environment. Especially children often repeat their unpleasant experiences and feelings while they play (Duman, 2010; Koçyiğit et al., 2007; Mabagala & Libent-Mabagala, 2012). Repetitive behaviors in playing eases the child's anxiety and make the child dominate the situation. Here, the child repeats playing, dividing the event into smaller pieces and plays it again and again. In this way, the child has the opportunity to experience the effects of negative events in a way that his personality can handle. According to Freud, the play process ends when the child's self-development is completed and logical thinking begins (Duman, 2010; Öztürk-Aynal, 2010).

Psycho-Social Development Theory

In Erikson's theory of psychosocial development, play is a mirror of the child's development and differs throughout developmental stages.

The changes that Erikson says are seen especially in the first four stages (trust versus mistrust, independence versus shame and skepticism, assertiveness versus guilt, success versus inferiority) of childhood increase the child's need to play. Erikson defined the "entrepreneurship versus guilt" period, which is the third of the developmental stages and spent between the ages of 3-6, as the "playing age". Erikson sees playing as a special mechanism of development and attaches special importance to playing. According to Erikson, play is a way of expressing emotions, a means of reconstructing past experiences, and the process of creating new models by designing the future through imagination. Through play, the child creates new situations to deal with real thoughts and events. Erikson stated that play has effects on the child's self-development. Cultural institutions and psychosexual stages have a very important place in the development of the individual. Play is a tool for the child to learn about cultural institutions and successfully overcome the psychosexual stages. Play helps the child get through the developmental stages in a healthy way by fusing his biological and social needs. According to Erikson, play helps the child meet his/her needs by creating situations in the past, in the present, and in the future. In the play, the child dramatizes the uncertainties, anxieties and desires of the self. Thus, the child passes from a stage defined by Erikson to the next stage in a healthier way (Bardak & Topaç, 2019; Duman, 2010; Ramazan, 2013).

Cognitive development theory

According to Jean Piaget, play is a mental activity and a phenomenon in which the child combines experience and knowledge. Playing is the way of placing the analyzed information into the system, that is, the harmony. Play is the most appropriate tool for the child to construct knowledge. Piaget draws attention to the child's process of structuring knowledge and states that it will not be possible to teach the child anything from the outside, and that learning can only be achieved through interaction with the environment and mental processes (Adak-Özdemir & Koçyiğit, 2019; Tuğrul, 2016).

Piaget stated that in the development of children from reflexes to abstract representations, there is a transition through play from being self-directed to cooperative representations involved plays. Thus, play involves a transition from the inside to the outside, from the individual to the social, within the increasing interaction of biological determination with the environment. As the child matures, his/her play develops in a way that includes the perspective of the other and the rules valid for everyone (İnan-Kaya, 2018).

Piaget stated that children's plays developed from imaginary plays to structured plays with rules. There is a directly proportional relationship between the development of play

and the mental development of the child (Duman, 2010). Piaget outlined the evolution of children's play during the first seven years of life by describing three successive systems—practice play, symbolic or make-believe play and plays with rules. These systems are the exact counterparts of sensory-motor, pre-operational and concrete operational intelligences (Nicolopoulou, 2004).

Practice Play (Sensory-Motor Development Phase, 0-2 Years)

It is defined as the plays that occur when babies repeat what they do and do to gain pleasure by running their existing sensory-motor schemes. Babies doing simple movements such as opening and closing their hands, trying to grasp an object, sucking their fingers and repeating the same behavior by enjoying it are examples of practice play (Santrock, 2018).

According to Piaget, this form of play arises from almost all sensory-motor schemes acquired by the child and mainly focuses on the child's use of objects (Nicolopoulou, 2004). It involves the repetition of established sequences of actions and manipulations for pure pleasure derived from mastery of motor activities, not for practical or instrumental purposes. It is due to the baby repeating the movements he/she has learned, testing his/her skills and wanting to have a pleasant time. Piaget emphasizes the importance of exercise plays for children to have knowledge about their cognitive development and environment (Güven, 2018). Babies begin visual and motor processes for exploratory and playful play in their first year of life. For example, at the age of 9 months, babies begin to choose new objects for exploration and play, especially responsive objects such as toys that make noise or jump (Santrock, 2018).

Symbolic Or Make-Believe Play

Symbolic or make-believe play is a play in which the child transforms the physical environment into a symbol. Between 9 and 30 months, children increase their use of objects in symbolic play. They learn to transform objects - by putting them in place of other objects or by treating them as another object in question. For example, a preschool child treats a desk like a car and while holding the leg of the desk saying “I am fixing the car” (Santrock, 2018). It is seen that the ability to symbolize increases in parallel with mental development. At the age of 2-3, children give life to inanimate objects. He/She talks to his/her babies. While they live in fantasy worlds with the objects around them, it is seen that these objects are used with their functions in the real world. Namely, they drink coffee from an empty cup and eat from an empty plate. Or they take the objects out of their real usage area. Eg. They view scraps of paper as a flaming fire or use a stool as a bath. At the age of three, this type of symbolization gives the appearance of the child living in a fantasy world. In addition, there is an increase in dramatic plays. Eg. the child becomes a pilot or a cop. Most fantasy plays for children under the age of three are speechless. In children over the age of three, speech is seen in fantasy plays and the plays begin to become more complex. More objects join the play. These objects are used

for different purposes. This shows that the ability to symbolize develops in proportion to age and becomes versatile (Özdoğan, 2020). Many play experts see the preschool years, symbolic play of dramatic or socio-dramatic nature, as the "golden age" of their play. Symbolic play peaks at the age of 4-5 years, then gradually decreases (Santrock, 2018).

Plays With Rules

This type of play rarely occurs before the age of 4 to 7 years and is predominantly seen between the ages of 7 and 11 (Nicolopoulou, 2004). According to Piaget, who thinks that this stage requires a higher cognitive level, logical thinking develops not only when children are interested in objects, but also when they play with other children. Working together, making an effort together in a group, talking together are important for mental development. The symbolic play in this phase is full of rules, attention to realistic details. The rules of the play and the punishment to be given to those who do not follow the rules are important (Özdoğan, 2020; Ramazan, 2013). In these plays, the child has to choose one of two behaviors. Either he will break the rules, achieve his goal and win the play, or he will follow the rules and settle for the result. Inner conflict arises when the child needs to obey the rules and control himself, and the child often breaks the rules. The goodwill of the children in the group plays a major role in the child's compliance with the rules. While obeying the rules of the play, the child gets rid of the self-centered way of thinking and behaves in accordance with the social norms due to the rules of the play (Özdoğan, 2020).

Socio-cultural development theory (Lev Semenovich Vygotsky),

Vygotsky believes that play contributes significantly to cognitive development rather than simply reflecting cognitive development. According to Vygotsky, real play begins around the age of 3 with pretend play (Nicolopoulou, 2004).

Play typically involves more than a single child; and the themes, stories or roles in the play pieces reveal children's understanding of the sociocultural materials of their communities and their use for play. Therefore, even when a young child plays alone, Vygotsky considers this type of play to be significantly social, as the themes and parts of the play express socio-cultural elements (Nicolopoulou, 2004).

According to Vygotsky, symbols are the basis of socio-cultural activities. Higher mental processes represent the combined use of tool and symbol. Symbols that symbolize control and communication in the application phase turn into problem-solving behaviors that the individual plans and adjusts internally in the future (Duman, 2010).

According to this theory, the relationship of the individual with the environment begins with the individual being directly affected by the environment and shows a change when the individual takes control of the environment indirectly. The play provides the most suitable environment for this cognitive mechanism to work. The child gets rid of the

tension created by the desires, wishes and situations that cannot be satisfied by the social environment through play. The play is exploration and a new creation. Play is a mechanism of conflicts and contradictions that cannot be resolved in any other ways. While the child is playing within this mechanism, he/she uses the elements he/she remembers from real-life experiences and especially the relationships in lived events. With his/her free will, the child produces new behaviors by using the cause-effect relationships he/she has acquired from his/her previous experiences. Thus, the child learns to cope with his/her negative impulses. In the process of coping with negative impulses, the child has a feeling of happiness through play (Duman, 2010).

Vygotsky argues that there is a virtual realization attempt to satisfy requests that cannot be fulfilled during the play. At this point, Vygotsky draws attention to the activity of imagining. He states that imagination, as an activity of human consciousness, originates from action, like all conscious functions, and argues that the daydreaming/imagination activity seen in school-age children or adolescents in later periods is also a type of play that does not involve action. On the other hand, according to him, although play is defined as an activity that the child performs in order to meet his/her needs, it would be misleading to say that the child consciously plays plays to meet these needs. In this sense, play is different from activities such as work or homework. Here, there is the satisfaction of age-specific needs in the shortest known way (through play) with an unconscious motivation. In this respect, while Vygotsky is consistent with what psychoanalytic theory says about play, he puts forward an idea that includes not only social-emotional development but also cognitive development. However, unlike other theorists, Vygotsky accepts the imaginative aspect of play not as a form of play, but as an inherent feature of all play activities (İnan-Kaya, 2018; Vygotsky, 2016).

Bruner's theory

Bruner (1972) emphasizes that play develops creativity, behavioral innovation and flexible thinking skills in children. He argues that thanks to flexible thinking, children will be prepared for adulthood (Öztürk-Aynal, 2010).

Once children develop new behavior combinations in their plays, they can use them in the problems they encounter in their real lives. The behaviors learned during the play are then recorded in the child's memory as new and useful behavior patterns. Thus, children gain flexibility to develop different behavioral options in their plays. According to Bruner, the process of the child in the play or the meaning of the play is much more important than the result of the play. According to him, children can try many different situations in their plays aimlessly without any worries (Öztürk-Aynal, 2010).

Other Play Theories

Huizinga's theory

Johan Huizinga (1872-1945), Dutch historian, considered playing as the most important element in the formation of cultures and brought the concept of Homo-Ludens (playful person) to the concepts of Homo-Faber (constructive person) and Homo-Sapiens (thinking person) (Uğurel & Molalı, 2008). In his book "Homo Ludens", Huizinga revealed the importance of playing for human beings and the playing that humans use while creating culture by basing it on documents (Arslan & Bulgu, 2010). Huizinga stated in "Homo Ludens" that the play is older than culture, and human civilization did not add essential features to the overall concept of play. According to him, animals play exactly like humans and all the basic rules of the play have already been performed in animal plays. Huizinga says that it will be enough to watch the puppies' playing in order to observe the basic rules of the play (Arslan & Bulgu, 2010). According to Huizinga, playing serves social and cultural functions that will transform the culture by creating social groups for children and adults, creating different communities, social status, and ensuring social cohesion (Kaya, 2021).

System theory

According to Helanko, who developed this theory, play is a relationship between the individual and his/her environment. The individual and his environment form a system. Helanko defines the individual as the subjective pole of the system and the environment as the other objective pole of the system (Bardak & Topaç, 2019; Uğurel & Molalı, 2008). In order for it to be called play and play behavior, the individual should be able to choose his/her own play activity, the objects in the play and his/her playmate without any external coercion. By creating a play environment, the child can move from one play environment to another by him/herself, and eliminate the negative effects from the outside. The child has such a talent (Bardak & Topaç, 2019; Ramazan, 2013).

Arousal theory

According to Berlyne, playing is balancing the arousal states of the child based on his/her exploration behaviors (Duman, 2010). According to Berlyne, standing still is not the natural state of the organism. The arousal mechanism seen in playing is controlled by the organism and a sense of pleasure is experienced at the end of the process (Ramazan, 2013). The child's enjoyment of the play explains to us the reason for the behaviors done during the play. The child can use play material in different ways and different usage brings uncertainty (Duman, 2010). The young child may be nervous and excited about sliding down the slide, but he/she still slips and repeats this behavior. After a while, the way of sliding shows differences. Each different move brings with it a new state of uncertainty. Although the slide is not a new tool, the child changes his/her own behavior and adds

innovation and excitement to the activity (Ramazan, 2013). With the child's consumption of innovative options, playing loses its interest (Duman, 2010).

When children cannot add something different to the play, they lose interest in that play. In fact, although the children seem to play the same way all the time, it can be seen that they constantly add innovations to the play when the children are released. As the child who learns to slide from the slide increases his self-confidence, he will try different ways such as putting his face down, sliding on his back, trying to slide on his feet, climbing the slide instead of the stairs.

In fact, the fact that children who cannot read patch ask their parents to read the same book over and over is due to the fact that something different draws their attention in each reading.

Here, the duty of adults is to support children to try in different ways as long as they are sure of their safety. This approach is necessary for the continuation of the innate creativity of children.

When children cannot add something different to play, they lose interest in the play. In fact, although children seem to play the same way all the time, actually when children are let free, they constantly add innovations to their play. As the child learns to go down the slide, as his/her self-confidence increases, he/she will try different ways such as going down on his/her face, on his/her back, while standing, climbing the slide instead of the stairs. Here, the duty of adults is to support children to try in different ways as long as they are sure of their safety. Actually, the fact that illiterate children ask their parents to read the same book over and over is due to the fact that something different attracts their attention in each reading.

Parten's theory of play

Parten stated that playing goes through certain stages depending on the age of the child. While creating these stages, Parten prioritized the social development stages of children. These stages, which follow a certain hierarchy depending on age, emerge after the previous stage has taken place. However, in the later stages, playing behaviors of the previous stage continue to be seen. Parten discusses playing processes in six basic play categories. Two of them are non-playing behaviors and the other four are social play behaviors (Bardak & Topaç, 2019; Tuğrul, 2010). These phases are as follows:

Unoccupied (play); it is the stage where the child is not interested in the plays of others and does not actively participate (Kaya, 2021).

Onlooker play (behavior); The child can be interested in the plays of others, talk to other players, but is not a direct participant (Aksoy & Dere-Çiftçi, 2020). In this stage, the child

is still independent as in the previous stage. He/she only plays the role of a spectator of other children's plays without participating in other children's plays. An example of this is the situation of a child who watches a group of children while they are playing with a toy that has just been brought to the classroom without entering the group (Kaya, 2021).

Solitary (independent) play; At this stage, the child plays alone with his own toys, the playground where the child plays does not require him to be together with other children. Individuality is characteristic of this phase. Children are not interested in where and what they play with each other (Tuğrul, 2016). Parten stated that this period is specific to children between the ages of two and two and a half. At this stage, social interaction is very low. However, the stage of playing alone is important, the child should be encouraged to do some activities alone (Aksoy & Dere-Çiftçi, 2020).

Parallel play (adjacent play, social coaction); It is seen in children between the ages of two and a half and three and a half. The child plays with or near others, but does not play with them, but continues to play independently, alone. Children use the same toys among their peers that are around other children, but there is no talk about sharing and playing (Aksoy & Dere-Çiftçi, 2020). This type of play can be physical, incorporate objects or language, be pretend, or include all of these aspects (Smith & Pellegrini, 2013).

Associative play; At this stage, children play by communicating within the same play. In associative play, which is a play phase that does not exceed a few people, children do not act in accordance with a common goal due to their egocentric characteristics. Play usually takes place simultaneously. In addition, plays with very strict rules are not seen in this stage where the individual characteristics of children are at the forefront (Bardak & Topaç, 2019).

Cooperative play; The child plays in a group that has come together for a specific purpose and creates a product. In this stage, there are plays with rules that more children play together than in the previous stage (Duman, 2010). With the increase in communication and social skills, there may be division of labor and various responsibilities among children. Children strive to do their best. As the influence of egocentrism begins to wane, plays with rules are easier to understand. Children realize (although they don't want to fully admit it) that other people can have as much say as they do. The plays played in this stage have more similar qualities to the actions of adults. In other words, it allows them to prepare for advancing ages (Bardak & Topaç, 2019).

The Effects of Play on the Developmental Areas of the Child

Play is a part of the child's life, the most serious occupation, a means of discovering him/herself and the world, and one of the most effective ways to learn life skills and discover his/her talents and interests. These features of play contribute to the physical, mental, emotional and social development of children and enable them to develop holistically.

Cirhinlioğlu (2011), İnan-Kaya (2018), Özer, Gürkan & Ramazanoğlu (2006) and Smith & Pellegrini (2013) state that play is one of the most indispensable elements for the development of the child and one of the important tools that provide the child's physical, cognitive, emotional and social development. Play is meaningful as a part of the child's life whether it is species-specific and evolutionary or embedded in the social and cultural context or associated with psychological well-being.

19 th-century kindergarten movement, which popularized the concept of preschool education, was based on the idea that songs, plays, and other activities are a means for children to gain perceptual, cognitive, social, and emotional knowledge that prepares them for entering the world (Wang & Aamodt, 2012).

Effects of play on the child's physical development

Play is actually the language of movement of children (Tuğrul, 2016). During playing,, the whole body of the child moves. This ensures that body systems work in a healthy way (Yavuz, 2016). Plays that require physical strength such as running, jumping, climbing and crawling ensure the regular functioning of the child's respiratory, circulatory, digestive and excretory systems (Anılan, Girmen, Öztürk & Koçkar, 2004). During playing, the child's large and small muscles are constantly working with contraction, relaxation and stretching. Especially in active plays, heart rate, blood circulation rate and breathing increase above normal. In this way, plenty of oxygen passes into the blood and more oxygen and nutrients are carried to the tissues through the blood flow (Anılan et al., 2004; Aykaç & Köğçe, 2020; Burgaz-Uskan & Bozkuş, 2019). Children's brain tissues and body cells need higher levels of oxygen than adults (Yavuz, 2016). For this reason, care should be taken for children to play in the open air in order to have a healthy development.

While playing, during the play, children's movements such as walking, running and jumping are constantly repeated, so the body gets plenty of oxygen and accelerates muscle development, as it allows more blood to be pumped (Aykaç & Köğçe, 2020). Thanks to active plays, functions related to growth such as burning excess fat in the body, strengthening the muscles, and more regular functioning of the endocrine glands are provided (Baykoç- Dönmez, 2000). The sun rays exposed in outdoor plays provide the synthesis of vitamin D, toxic wastes are thrown out of the body through sweating (Yavuz, 2016). During playing, many psychomotor skills such as strength, balance, reaction speed, coordination, flexibility and agility are acquired. In addition, the ability to control large and small muscles and use them at the required speed during movement is gained (Aykaç & Köğçe, 2020).

Body makes its movements thanks to the muscles. Muscles perform learned movements more easily than unfamiliar ones. This accelerates muscle growth. Jumping, climbing, bouncing, jumping, running movements in play activities support the development of large muscle skills, while kneading materials, blocks, and plug-in and remove toys support

the development of small muscles.

Children gain coordination between parts of the body through play. Playing with kneading materials of different hardness, bead threading etc. activities improve children's hand-eye coordination. This situation affects the school readiness level of children. Poor hand-eye coordination can negatively affect academic achievement, as well as cause problems in performing daily activities.

Children can try a move they have never seen before or are afraid to try, by taking strength from their friends and teacher. Here, it is important that the teacher, knowing the child's capacity well, encourages the child in a realistic way, adapts the activity to his/her developmental level and makes it difficult gradually. In this way, both child's physical development and self-efficacy belief are supported. A child who gains self-efficacy in physical skills may generalize this to other areas.

The effects of play on the social development of the child:

Playing plays is the best way to make friends and develop social skills (Kuğuoğlu & Kürtüncü-Tanır, 2006; Yavuz, 2016). Because the play is the most natural agreement environment for children (Yörükoğlu, 2011). When children who do not know each other come together, they can start playing together without asking each other their names. Because the only language used by children living in different parts of the world, speaking different languages and living in different cultures is the language of play. Thanks to this language, they can easily understand and establish warm friendships.

Children who spend time with their peers become more sociable and make friends easily (Yavuz, 2016). Children learn to take the first step in establishing a relationship through play, to know how to participate in an ongoing activity, to maintain the relationship, to overcome rejection, to listen and watch others in the play environment, to understand the behavior of others, to overcome feelings of shyness and introversion, and to show reconciliation skills in conflict situations (Ateş, 2016; Sevinç, 2005).

Play enables children to learn from each other, children learn from each other's experiences, Play is a developmental opportunity to learn from others' perspectives, to recognize the existence of different ideas, and to develop acceptance and sensitivity to different ideas. Children become aware of their own strengths and the strengths of others during peer relationships, and similarly, children reach the maturity to develop and accept their weaknesses during peer relationships (Tuğrul, 2016).

Children acquire social rules and ethical values more easily through play. While enjoying the pleasure of being with other child or children, they realize that if they want to play with them, they must discover ways to get along with them (Cirhinlioğlu, 2011). They learn the rules of acting together with their friends (Tuğrul, 2016). In addition, children

learn social rules such as respecting others, protecting the rights of others and their own rights, undertaking assigned tasks, and being able to make decisions and implement them through play (Anılan et al., 2004). In summary while children are playing and having fun, they are learning skills that are foundational and will allow them to become socially-adjusted, and well-adapted adults (Majumdar, 2020).

Effects of play on the emotional development of the child

The healthy emotional development of the child depends on the trust he/she establishes with his/her parents. Especially the first two years after birth have critical importance in terms of gaining basic confidence. It is important to adequately meet the physical and emotional needs of the child in the formation of a sense of trust. Love and play are the most important emotional needs of the child.

According to Mabagala & Libent-Mabagala (2012) the play also provides opportunities for bonding. The plays that children play with their parents create a beautiful and warm moment between parent and child. It creates close relationships and bonds between children and their parents. Ties also lead to love and trust. Solter (2020) states that when parents play with their children, they meet their need for bonding and help them feel loved. According to Solter, play is one of the best ways to recharge the emotional energy of the child.

Quality time spent with children also supports the social and emotional development of children. Quality time is not when a parent and child share the same space or when a mother watches her child play with a toy. For a qualified union, parents must leave their world and enter the child's world, and let themselves be swayed to its rhythm. This is not only for the emotional development of the child, but also a good way for parents to relieve the stress and tiredness of the day. The best ways to do this are to play plays with children, read interactive books, take nature walks, observe nature together, using natural materials at home. You don't have to go to the forest for this. Going to a nearby park and collecting leaves, cones, stones, branches is enough to play with. Different colors of sensory materials can be prepared by dripping jams of different colors into the sour yoghurt at home. A great playground can be created by making bridges and castles from a sheet, table and chairs. This will also provide children with different perspectives and flexible thinking skills

One of the most important functions of play in terms of children's emotional development is that the play activity is therapeutic because it is natural. In particular, with the influence of psychoanalytic theory, the claim that there can be an implicit representation of reality in plays, just as in other experiences (dreams, slips of the tongue, etc.) (İnan- Kaya, 2018).

Freud (1920) was the first to argue that the child experiences his emotions in his/her plays. He saw the relationship between fantasy behaviors and plays and said that children

experience their unconscious desires and difficulties while playing (Özdoğan, 2020). Freud argued that play reflects the inner world and emotional life of the child. He argued that play has a therapeutic effect, that the child can express his/her anxieties and fears through play, and that play has both a preventive and a solving effect on the child's emotional problems. Freud used symbolic play to understand the child's conscious or subconscious fears and wishes (Aydın, 2008; Teke & Avşaroğlu, 2020).

Even if children have excellent parents, from time to time they may experience feelings such as anger towards their peers and disappointment towards adults. Even being unable to assemble a toy can make kids nervous. Children need to get rid of the tension caused by the negative stimuli they receive from their environment in their daily lives. Especially the limited cognitive and language development skills of young children make it difficult for children to express their anger, anger and disappointment. Children who cannot express their emotions through play or crying have to throw out their accumulated emotions over time by having tantrums. In the play environment, the child freely expresses the deep feelings that disturb him in an emotionally safe environment. Especially children who have experienced a traumatic event try to overcome this trauma by reflecting it in their plays.

As has been noted by Fillizoat (2020), children have the ability to express everything simply through games that they cannot state otherwise because they do not have the courage, are not aware of or do not have enough knowledge of the details of the problem they are experiencing.

While children have the opportunity to express their negative feelings such as sadness, anxiety, enmity, and jealousy in the play environment, they often feel relieved by getting rid of these negative emotions (Cirhinlioğlu, 2011; Koçyiğit et al., 2007). They find the opportunity to live without suppressing these feelings (Koçyiğit et al., 2007). With fantasy plays, children can face situations that cause anxiety more easily, and they can change the direction and shape of the results that cause them stress to a form that gives them less or no discomfort (Barnett, 1990; Duman, 2010).

According to Tuğrul (2016), children get rid of tension and conflicts by transferring their emotional needs in their inner world to objects, situations or friends in their plays. To cope with negative experiences, play offers the child the opportunity to rehearse. In this context, play is the safest way to improve children's emotional lives.

According to Fillizoat (2020), playing with children by paying attention to their emotions and by interacting with them has a positive effect on children's stress hormones. Moreover, Fillizoat maintains that children whose play needs are met by their parents can cope with challenges more easily when they encounter difficulties and stressful situations during the day. Particularly, starting the day with a game can significantly reduce the restlessness, whining or crying that may follow.

The child experiences and makes sense of all emotions while playing. As a result of this interpretation, he/she directs his/her relationship with other people. As a result of the events that take place during the playing, he/she learns to control his/her emotional reactions by experiencing all the emotions between pleasure and pain, such as happiness, sadness, anger, surprise, in his/her inner world. This control skill is not a situation that can be realized immediately, but has a long development process (Aykaç & Köğçe, 2020; Bardak & Topaç, 2019).

Dramatizing and playing emotional reactions also helps the child to know him/herself. The child is separated from egocentrism through playing. Play also develops self-confidence (MEB, 2007). In addition, while children experience spiritual satisfaction with the pleasure of achieving and sharing something in play, their self-confidence increases in order to achieve greater success (Gökşen, 2014).

Play helps the child to discharge the aggressive impulse, which is one of the most powerful and natural impulses (Yavuzer, 2005; Yörükoğlu, 2011).

Tören (2011) also revealed in her study that children can control and cope with many emotions they feel during playing. Arslan & Dilci (2018), in their study to determine the effects of children's plays on the developmental areas of children, from past to present, revealed that children's plays generally contribute positively to the development of children's physical skills, especially to character development, to form effective social relationships, and to their emotional and cognitive development.

Yatmaz et al. (2021) investigated the effects of traditional plays that are played together and require sharing on the social-emotional development of children aged 3-6, and found that these traditional plays improved children's social and emotional skills by enabling them to release their energies more easily, expressing their feelings and thoughts more easily, improving their self-confidence, increasing their communication skills, and improving cooperation and solidarity.

Effects of play on the language development of the child

Particularly dramatic and symbolic plays played from an early age are helpful for the child to both recognize sounds and intonations, and develop their ability to use them. Especially rhythmic and harmonious children's literature products such as children's songs, nursery rhymes, rhymes, finger plays and poems make significant contributions to expressive and receptive language skills (Bardak & Topaç, 2019). As children often have the opportunity to express their feelings and thoughts verbally by engaging in pairworks and dialogues while playing, they increase their vocabulary (Aykaç & Köğçe, 2020). They also improve their ability to use language and thought effectively.

Children learn all the structures of language through play. Therefore, play is also important

in terms of learning the basic concepts. They conceptualize objects, situations, words about people during playing (Tuğrul, 2016).

Studies on children's language development and communication skills have shown that children's plays have an effect on language development. Vygotsky, one of these researchers, said that children derive meanings from objects and actions through play, and as a result, symbolic representations are formed. According to Vygotsky, play and communication create a “zone of proximal development” between the skills that children have at the moment and their potential level. Children can build on their learning through play and communication. While doing this, language has a very important place in relations with adults who are more experienced than themselves (Duman, 2010).

British linguist Guy Cook notes the “predominance of play in all areas of human life, language in particular.” The feeling for rhythm, rhyme, assonance, consonance, and even grammatical structure emerges through play according to Cook, as learners while enjoying in the sounds and comforting society that go into making words and building vocabulary (Eberle, 2011).

According to Smith & Pellegrini (2013) research shows that children improve their verbal skills, increase their vocabulary and improve their language comprehension skills during play.

Gözalan & Koçak (2014) conducted a study to investigate the effect of "play-Based Attention Training Program" on the language skills of 5 and 6 year old children. They implemented the program. As a result of the research, they concluded that the "Play-Based Attention Training Program" was effective in increasing the language skill levels of 5 and 6 year old children.

Effects of play on the brain development of the child

Childhood is critical for brain development (Tuğrul, 2010). But as Golinkoff et al., (2017) stated, filling children with information does not encourage brain development.

The thing that most affects brain development is the healthy relationship established between the child and the parent. Play offers unique opportunities to establish and develop a healthy relationship between parent and child. Physical contact between the parent and the child, especially during playing, causes the secretion of the oxytocin hormone. The oxytocin hormone helps to form deep and lasting bonds between parent and child.

According to Uludüz (2019) American researchers, in a study they conducted in 2017, found that the brains of babies who had more physical emotional contact with their parents gave stronger responses. It has been determined that there is a greater increase in gray matter activity, which allows nerve cells to function in these babies. On the other

hand, with hugging, hormones that are effective in many issues from brain development to nutrition of babies are stimulated, and hugging also provides lifelong emotional and empathy development in babies.

Playing has the effect of activating the development of all functions of the brain. Because while children play, they take actions simultaneously, they use their multiple senses effectively, they are in motion, they use their language, they are in the application themselves, they enjoy, rest, etc. All these opportunities provided by play mean that the brain is used holistically, which is directly It is extremely important for the development of the child. The pleasurable feature of play allows the brain to be stimulated holistically with its features based on interaction, active participation, and thinking. Touch, sounds, colors and visuals mean the stimulation of the child's senses, which is important in terms of stimulating the synaptic connections in the brain (Tuğrul, 2010).

By enabling the formation of new connections in the prefrontal cortex, play supports the development of executive functions such as problem solving, reasoning and planning, cognitive flexibility, self-control, and self-regulation (Golinkoff et al., 2017).

During active plays, brain uses connections it uses to process learning in reading, writing, and math. It facilitates learning. Oxygen is supplied to the brain through active plays, and oxygen is essential for learning. As a result of the increase in the amount of oxygen in the blood cells going to the brain, attention and focusing skills increase (Bencik-Kangal, 2021).

Effects of play on the cognitive development of the child

Scientists such as Donald Winnicott, Jean Piaget, Lev Vygotsky, and Jérôme Bruner argue that play is effective in the development of a child's cognitive skills. According to Yavuzer (2005) plays have an important place in children's physical, emotional, social, language and especially cognitive development, because children learn to think and explore through play.

Children can try a move they have never seen before or are afraid to try, by taking strength from their friends and teacher.

Play develops versatile and flexible cognitive abilities. According to Golinkoff et al. (2017), play is to a child what petrol is to a car. Every mental activity that children participate in derives its strength from here. According to Tuğrul (2016), play is the most natural practice area for children to make logical inferences

By establishing relationships between the experience and knowledge gained through play, children gain the ability to use this knowledge to solve the problems they encounter later (Burgaz-Uskan & Bozkuş, 2019). The richness of play and the complexity in the

structure of the play develop children's convergent thinking skills. Children who play roles in the play use materials in richer forms and meanings. Again, children who play roles frequently can exhibit more flexible attitudes towards negative situations coming from outside (Duman, 2010). Sutton-Smith (1967) states that children's plays develop children's representation skills. According to Sutton-Smith, exploratory plays develop the child's analytical thinking skills, the plays played in the form of trial and error develop the child's guessing skills, the roles that the child plays with the imitation, and finally, the construction plays develop the structural thinking skills of the children (Duman, 2010). According to Piaget, children should be free to their wishes and preferences while playing. The child's setting up his own play and turning to objects according to his curiosity and interests support the cognitive development of children (Kaya, 2021). In play experiences, combining the sense of touch with the senses of vision, hearing, taste and smell helps build cognitive skills.

Vygotsky sees the benefits of play in terms of cognitive development for the preschool child as a prototype of the learning and development that will occur during a successful education in the following years (Duman, 2010). Through plays, children develop higher-order thinking capacities and executive function skills, which form the basis of learning complex academic skills such as literacy (Lockhart, 2010; Öztürk & Aksu, 2019).

Cognitive functions such as working memory, self-regulation (e.g., being aware of and controlling her emotions and behaviors), internal language or “self-talk,” and the ability to organize, concentratıng attentıon, plan, strategize, prioritize, starting and maintaining a task, ability to move between multitasking and perform other skills that determine later success in school. In fact these cognitive skills are all part of what we call executive function — the cognitive abilities that control and regulate other behavior. Play helps young children develop these abilities (Lockhart, 2010).

Gmitrova & Gmitrov (2003) studied two forms of management of the playing process: (a) teacher-directed play with simultaneous involvement of all children in the classroom, where the teacher plays the dominant role in the education process directing children’s activity, and (b) child-directed play in various small groups. Twenty-six observations were performed on 51 children in two mixed-age classrooms. The mean age of the children was 4.6 years, with age span from 3 to 6 years. They found a significant increase in cognitive manifestations during direction of the playing process in groups compared with frontal management of the lesson which is related with better employment of the powerful education engine of the free-play children.

Türkoğlu & Uslu (2016) revealed that the "Play-Based Cognitive Development Program" was effective in the cognitive development of children and its effect was permanent, as a result of their research that examined the effect of "Play-Based Cognitive Development Program" (GBCDP) on the cognitive development of 60-72 month-old children.

The relationship between play and learning

There are two complementary views on the importance of play. In "just play", which is one of these views, play is only important because it is a play. Playing itself is a value for the child. Child's play is a natural part of a child's childhood. He/she lives to play. From this point of view, play is the meaning of life for the child. Child maintains his/her existence through play. Play is the need, interest and right of children. Another view that emphasizes the importance of play is that play is an act of learning. It is important to place the play at the source of the child's learning (Tuğrul, 2010).

Play is the child's learning language (Tuğrul, 2016) and the most natural learning environment (Yörükoğlu, 2011). Play that emerges naturally and spontaneously in a child's life is the best way for a child to get to know the world. Plays help children to understand their environment and discover the world they live in (İnan-Kaya, 2018). According to Yörükoğlu, the play is an experiment room where the child tests what he/she hears and sees, and reinforces what he/she has learned. In short, the child playing is in his/her own little world. He/she is the ruler of the world him/herself (Yörükoğlu, 2011). Due to these features, the child is too much to be excluded from education. Human nature and development determine both the act of play and the formal and informal form of education. Therefore, it can be said that an understanding of education that does not emphasize playing is at risk of being outside the naturalness of the child. In this framework, thinkers and practitioners discussing child education often refer to the importance of play in education (İnan-Kaya, 2018). Drawing attention to the importance that should be given to play as an inseparable part of education, Plato, in his work titled "Republic", states, "…Even if what is forced on the body is not bad, what is forced into the head will not be remembered… Then you will not use force on happy young children. You will make education become a play for them. In this way, you can better understand what they are naturally suitable for." (Erol & Erol, 2018; İnan-Kaya, 2018). Gazzali said that the child should be given the opportunity to play whatever type of play he/she likes. According to al-Ghazali, the child only has the desire to play. If the child is completely banned from the play and only clings to the lesson and learning, his/her heart dies, his/her intelligence is canceled, he/she will always be troubled (Yavuzer, 2005). Choosing playing as the cornerstone of teaching and learning in the educational process is based on the educational philosophy of Jean Jacques Rousseau. According to Rousseau, education should not be on paper. The best learning is based on experience. It is okay for children to play plays all day, it is the activity that prepares them for life (İnan-Kaya, 2018). It follows from these views of Rousseau that one of the best learning methods for children is play.

In 1693 the empiricist philosopher John Locke, for example, insisted that learning to read "must never be imposed as a task, nor made a trouble." And to remove the fatigue and punishment, he engage attention that "dice and play-things, with the letters on them to teach children the alphabet by playing" would "make this kind of learning a sport."

(Dewey, 1930; Eberle, 2011). John Locke has guided educators in arranging learning environments by saying "if you want the lessons to be more attractive, take advantage of the child's play instincts at early ages" (Kaya, 2021). Two and a half centuries later, Locke's American heir, John Dewey, also took pains to think the relationship of necessary work to play where learning is concerned, and expressed the feeling. "Where something approaching drudgery or the need of acomplishing externally imposed tasks exists," Dewey said, "the demand for play persists. . . . No demand of human nature is more urgent or less to be escaped." (Dewey, 1930; Eberle, 2011). Dewey, which is unique to the nature of the child, on the other hand, allows him/her to be a part of the society, and is a means of acquiring values while socializing, should be a part of education (İnan-Kaya, 2018). Dewey also argued that it is important for the child to be included in the learning environment by doing and experiencing. According to Dewey, such an environment should be prepared with plays (Koçyiğit et al., 2007). According to Fröbel, play; It is the core that determines all life. child playing games is in need. Therefore, everything can be better taught to the child through play. Child provides physical and mental development through play. Information acquired during the game settles better in the child (Asımoğlu, 2012). Donald Winnicott, Jean Piaget, Lev Vygotsky, and Jérôme Bruner are among the scientists who advocate that games should be used for effective and permanent learning.

One of the main features of the preschool education program in many parts of the world and in Turkey is that it is play-based. In the Pre-School Education Program, "Play is the most appropriate learning method for children in this age group. "All activities should be organized play-based." These statements show that playing is described as both an activity and a method (Bardak & Topaç, 2019).

In the interviews Adak-Özdemir & Ramazan (2014) had with preschool teachers, teachers stated that when there is no play time in the daily schedule, children face many problems ranging from developmental problems to negative moods, and play-based learning environments are of great importance in freely reflecting the child's self and potential.

While playing allows many methods such as observation, experimentation, and problem-solving to be used together, it is possible to consider the interests, wishes and needs of children while planning the learning process. However, playing makes it possible to use all the senses effectively. Children who activate all their senses through play internalize knowledge and skills. Thus, more effective and permanent learning takes place.

Children acquire new knowledge through play, use their old knowledge and restructure their knowledge by rearranging it. The play method is in a sense the cement of the educational process, with this feature of connecting old and new knowledge. In the process of learning new information and synthesizing it with old information, the playing has an important motivating role in activating the relevant units in the brain (Bardak & Topaç, 2019; Kuğuoğlu at al., 2006; Tuğrul, 2016).

Play is based on the principle of reusing what is learned during playing. In other words, new concepts and rules are learned during play and it is possible to continue playing thanks to these new learnings. Therefore, motivation and participation are high while playing, which ensures that the learning that takes place while playing is permanent. For example, teaching numbers in a foreign language based on the play of hopscotch enables the child to learn new concepts in a play they know and on the other hand, to become more proficient while playing that play (İnan-Kaya, 2018).

While playing, children discover, try, research and question people, objects and events (Aksoy & Dere-Çiftçi, 2020). Children actively use cognitive skills during play, contributing to memory and recording processes in the brain (Bardak & Topaç, 2019).

Play also encourages important learning dispositions, engagement and participation and the assembling of different cognitive processes (https://theeducationhub.org).

Play also important to the development of that most specialized skill of linguistic intelligence—writing. (https://theeducationhub.org).

Young children learn better using multiple senses at the same time. Sensory plays are the best learning tools for children as they include activities that stimulate all senses. Playing with easily accessible sensory materials such as soil, mud, dough, yoghurt, legumes, and different fabrics enables the formation of new synaptic connections in their brains. The more often the synaptic connections in the brain are used, the stronger they become, and when they are not used, they are destroyed. The number of synaptic connections affects learning. More synaptic connections provide better information transfer.

According to Butcher & Pletcher (2016) as stated in Early childhood educators cannot exagerate the importance of sensory play in the educational process. It is the is the basis of all the skills children will use in school learning to read, write and solve math and science problems. Once a child has these experiences, they are able to draw upon the body memory and cognitive memory of their experiences when faced with new situations. Also, the process of observation is a skill in and of itself. Keen observation skills give a child an advantage in school and throughout life. This process continues through the child's whole life and is the same process adults use to discover new medications or comprehend the nature of matter at the molecular level. "By providing students with materials that they can physically manipulate, play with and explore, teachers help them learn more about the world and develop crucial skills that they will utilize later in life," said Caitrin Blake of Concordia University Nebraska.

According to Tuğrul (2016), the process of learning through playing consists of generating ideas, researching, examining, observing, participating, and experimenting instead of rote reminders. Also Process and action are directed by the child rather than the teacher. This increases the permanence of what has been learned.

Children need to practice and develop previously learned skills before they can learn new skills. Plays provide opportunities for children to practice and develop these skills.

Highly active plays help children master their impulses and concentrate on important things at school. In his study, Pellegrini revealed that giving school-age children play breaks maximized their attention levels in school tasks involving thinking (Bencik-Kangal, 2021).

In order for learning to take place, children need to feel safe in the learning environment. According to Tuğrul the psychological climate of the learning environment directly affects the learning efficiency of the child. Organizing the necessary learning environments that will determine a child's learning styles will not only affect the learning success of the children, but also make them feel safe and happy emotionally and socially (Tuğrul, 2016). One of the important factors affecting learning is anxiety. In cases of intense anxiety, normal thinking activities do not occur. Anxiety prevents learning from happening. In these cases, playing plays with children can be effective in reducing their anxiety. Because play activities reduce the level of stress and anxiety by reducing the release of cortisol.

The data reaching the brains of children who do not feel safe is sent to the brain stem (cerebellum), where more automatic movements occur, instead of being transmitted to the neocortex via the thalamus and amygdala in the limbic system, where emotions are processed. Faced with such a situation, the person tends to exhibit behaviors that will ensure self-security instead of producing high-level thoughts (Keleş & Çepni, 2006).

Based on these views, it is possible to say that the play that contributes to the holistic development of the child is a multidimensional phenomenon. In the books written by many thinkers and educators from the past to the present, it is emphasized that the play is an inseparable part of education. When teachers plan their activities as much as possible, giving wide space to plays and allowing children to start the plays will keep their innate desire to explore and learn, as well as ensure that what is learned is permanent.

Children want to direct their play and get great pleasure from it. They are uncomfortable with adults directing plays. Adults should immerse themselves in the rhythm of the play and the child as much as possible.

Although what happens during playing is not real for us, it is real for the child. The child really lives. Therefore, when the child prepares a pizza in the oven for the adult, that pizza is really hot. The adult needs to pretend to eat a really hot pizza while eating the pizza. Otherwise, the child cannot fully enjoy playing.

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Chapter 2

DEVELOPMENTS IN THE FIELD OF MATHEMATICS AND MATHEMATICS EDUCATION IN TURKEY BETWEEN THE YEARS 2000-2020

DEVELOPMENTS IN THE FIELD OF MATHEMATICS AND MATHEMATICS EDUCATION IN TURKEY BETWEEN THE YEARS 2000-2020

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INRODUCTION

In this study, it has discussed that the developments in the field of mathematics and mathematics education in Turkey between the years 2000-2020. In this direction, the products of scientists working in the field of mathematics and mathematics education as a department in the process, current developments in primary, secondary and higher education institutions in terms of mathematics and mathematics education, prominent approaches in mathematics teaching and changes in mathematics teaching programs were examined.

The Effect of Computer Technology in Mathematics and Mathematics Education Studies

It can be said that the 2000s marked a breaking point in the tendency of technology to do mathematics and take place in mathematics classes (Heid, 2002; Lavicza, 2010; Raines & Clark, 2011). Since the 2000s, along with technological developments, Dynamic Geometry Software (DGS) and Computer Algebra Systems (CAS) have been widely used in the fields of mathematics and mathematics education. DGS and CAS software, specially developed for analysis, algebra and geometry, have been used with research-oriented and instructional functions such as organizing, visualizing and discovering data (Tokpah, 2008). Programming languages such as Matlab, Maple and Mathematica have been used extensively in undergraduate and graduate mathematics research. Technology has started to be used more for graphic and geometric drawings.

In the report prepared by the State Planning Organization for the years 2006-2010, the FATIH (Movement to Increase Opportunities and Improve Technology) project was initiated by the Ministry of National Education to realize the goal of "Information and communication technologies will be one of the main tools of the education process and students and teachers will be able to use these technologies effectively". With this project, it is aimed that the teaching-learning process in Turkey should be computer-aided, as in the South Korean model, following the information society strategy (Ekici & Yılmaz, 2013). Within the scope of this project, smart boards were installed in the classrooms (Figure 1).

Figure 1. *A smart board installed in schools within the scope of Fatih Project*

In order to complete the online content that will be needed in the context of the FATIH project, information and instructional technology experts are invited to support the Education Information Network (EBA) project.

Developments in Mathematics Curriculum in the Primary, Secondary and High School

When the process between 2000-2020 is examined, it is seen that revisions were made in the primary, secondary and high school mathematics curriculum in 2005, 2006, 2009, 2013, 2015, 2017 and 2018. In 2005, the Mathematics Curriculum for primary and secondary education (Grades 1-5, Grades 6-8 and Grades 9-12) was revised by the Ministry of National Education, Head Council of Education and Morality. With these programs, a paradigm shift has been made in mathematics teaching. Traditional mathematics teaching has left its place in the constructivist approach. Along with these programs, new alternative measurement and evaluation methods and techniques required for process evaluation were included (MEB, 2005, 2013). In accordance with the

philosophical approach adopted in the program, the expression of achievement was used instead of purpose (Sezgin Memnun, 2013). After 2005, there were significant changes in the mathematics curriculum (TTKB, 2005), which underwent a serious revision in 2005, when the principle of "every child can learn mathematics" was based. Necessary arrangements have been made in the learning areas whose objectives have been renewed in line with the needs of the age, and the competencies and skills that are thought to be gained have been increased. In addition, the acquisitions in the curriculum have been made simpler by editing, combining or updating. In addition, the fact that the lesson duration has been increased by a quarter is a great point and shows the importance given to mathematics. Anymore to doing advanced mathematics in Turkey, it is seen that studies have started to be carried out intensively in the context of students, prospective teachers and teachers samples and study groups in the context of cognitive, affective dimensions and different teaching methods within the framework of mathematics education (Ulutaş & Ubuz, 2008). In this program, for the first time, the duties of teachers and students and the characteristics of the teaching-learning environment were specified. Accordingly, students in learning environments are students who do research, are active participants, think and question, can work in groups, love mathematics and are self-confident in mathematics. Teachers, on the other hand, are individuals who prepare environments that will enable students to think independently and critically, plan and direct the learning process, guide students in their learning, produce activities necessary for learning, and evaluate their students in various dimensions with different measurement tools (MEB, 2005). As a result of this transformation, primary and secondary school mathematics curriculums published in the period from 2005 to 2018 have undergone radical changes in terms of their aims, content, achievements, skills and application steps of the program. The main reason for this radical change is that the new curricula developed have been revised in terms of both content and philosophy, namely constructivism and student-centered education philosophy (İlhan & Aslaner, 2019).

Since 2003, questions on mathematical literacy have begun to be asked in the PISA exams, which have been held every three years. In line with the content of such exams, since 2018, mathematical literacy questions have started to be asked in the Basic Proficiency Test and Field Proficiency Exams held within the framework of both the high school entrance exam and the higher education entrance exam. In this context, it is seen that the content of mathematics teaching in primary and secondary education and the content of mathematics problems solved in lessons have also been changed.

Overview of National Education Councils in the Outline of Mathematics Education

The National Education Council, which meets periodically under the supervision of the Turkey Ministry of National Education, is the highest advisory body where the current situation of the national education system in Turkey, the problems experienced and suggestions for their solution are discussed and evaluated. The decisions published as a result of the meetings of the National Education Councils, on the other hand, can be

decisive in shaping Turkish education policies, although they can not go beyond the quality of advice. For this reason, it is considered significant to examine the decisions taken in the said Councils in terms of mathematics and mathematics education.

In the period between 2000-2020, the National Education Council meetings were held 3 times. In the 17th National Education Council, which was held on 13-17 November 2006, the first of these, the structural situation, transitions between levels, orientation, and examination system in the context of the Turkish education system in the globalization and EU process were taken into consideration. In this meeting; There is no decision that directly concerns the field of mathematics and mathematics education (TTK (Talim ve Terbiye Kurulu Başkanlığı), 2006). However, it can be said that the decision was taken for "Primary school teaching to be up to the 1st, 2nd and 3rd grades, and that the lessons are given by the branch teachers in the 4th and 5th grades" is significant for the teaching of mathematics in the primary school. Furthermore, when the decisions are taken to increase the personal, academic and professional knowledge, skills and equipment of teachers in pre-service and in-service training programs are considered in the context of mathematics teaching, it can be seen that there is a positive effort to improve the current situation.

At the 18th National Education Council held on 1-5 November 2010, decisions were taken that the terms used in lessons such as science, technology and mathematics should be rearranged in cooperation with the Turkish Language Society (TTK, 2010). Additionally, to the teacher of each lesson; It can be said that the decisions are taken to contribute to the effective use of classrooms by assigning the duties and responsibilities of organizing their own classroom, keeping and protecting the tools and equipment to be used continuously, also partially manifest themselves in the implementation dimension in the next process. In this process, with the effort to spread the "branch classrooms application", mathematics classrooms were started to be created in some schools. Branch classrooms, which are a system in which students learn in classrooms equipped and arranged according to the lesson content, are associated with branch teachers and teachers can have the opportunity to organize their own classrooms. In addition, some studies have shown that the branch classroom system increases the motivation of the teachers, the boards and visual materials in the classrooms motivate the students and create a desire for research (Özyürek et al., 2017) and thus increase the success of the teachers and students who are inspired by the branch classroom system (Özyürek et al., 2016) shows. Lastly, the main agenda items of the 19th National Education Council, which was held between 2-6 December 2014, consist of subjects such as curriculum and weekly lesson schedules, increasing the quality of teachers, improving the quality of education administrators and school safety. It can be said that in these meetings, which are generally related to the process of restructuring the education system, regulations regarding mathematics education were indirectly taken (TTK, 2014).

Postgraduate Studies in Mathematics and Mathematics Education

Between the years 2000-2020, there has been a significant activity in mathematics education research in Turkey. Anymore, the belief that "every mathematician is also a mathematics educator" is changing and the field of mathematics education emerges as an important research area. In recent years, there has been a significant increase in postgraduate studies in the field of mathematics education in Turkey, and there has been a dynamism. In order to reach the postgraduate studies in the field of mathematics education in Turkey between the years 2000-2020 on the web automation of the National Thesis Center, a search was made with the keywords "mathematics education" and "mathematics teaching".

Table 1. *Postgraduate Thesis in Mathematics Education*

Year	Master degree	Doctoral degree
2000	7	0
2001	3	0
2002	8	0
2003	10	2
2004	9	0
2005	15	0
2006	7	3
2007	11	4
2008	9	4
2009	11	2
2010	20	3
2011	18	2
2012	23	5
2013	14	6
2014	12	5
2015	16	0
2016	18	7
2017	15	6
2018	22	2
2019	67	9
2020	20	4
Total	**335**	**64**

While a total of 90 postgraduate theses, 19 of which were doctoral and 71 master theses, were completed between 1980 and 2000 (Bozkurt, Patoğlu, Cücük, 2020), this number increased to 335 in master's and 64 in doctorate programs between 2000-2020. It is noteworthy that most theses were prepared in 2019. As a result of the data obtained,

although research has been carried out in the field of mathematics education in Turkey since the 1990s, it is striking that there has been a significant increase in the number of theses produced, especially after 2005. This shows that there has been a serious movement in the field of mathematics education after 2005 and this is reflected in the number of theses. This situation also points to the increase in the number of mathematics education researchers and the number of institutes providing graduate education in the field of mathematics education, where mathematics education has started to settle in Turkey as a research area (Baki, Güven, Karataş, Akkan & Cakıroglu, 2011).

In order to reach postgraduate studies in the field of mathematics in Turkey between the years 2000-2020, a detailed search was made by selecting the "mathematics" department option in the web automation of the National Thesis Center implemented by the T.R. Council of Higher Education. According to the results of the review, a total of 1770 postgraduate theses, 450 of which were doctoral and 1320 master, were completed between 1980-2000, while a total of 11,451 postgraduate theses, 2613 of which were doctoral and 8838 master's, were completed between the years of 2000-2020. When these postgraduate theses are considered quantitatively and evaluated according to their preparation years, it is noteworthy that the number of theses was low in the early 2000s. As a matter of fact, 158 master's and 32 doctoral theses were made in 2000, the year when thesis studies were the least. However, there has been a gradual increase in postgraduate thesis studies in the following years. It is pretty remarkable that the number of master's theses is 1000 in 2019.

Table 2. *Distribution of theses in the field of mathematics between 2000-2020 by years*

Year	Master degree	Year	Master degree	Year	Doctoral degree	Year	Doctoral degree
2000	158	2011	518	**2000**	32	**2011**	135
2001	185	2012	459	**2001**	43	**2012**	131
2002	199	2013	491	**2002**	77	**2013**	171
2003	223	2014	467	**2003**	83	**2014**	210
2004	262	2015	481	**2004**	63	**2015**	198
2005	318	2016	467	**2005**	65	**2016**	216
2006	366	2017	533	**2006**	74	**2017**	176
2007	406	2018	550	**2007**	99	**2018**	187
2008	360	2019	1000	**2008**	80	**2019**	199
2009	404	2020	459	**2009**	115	**2020**	134
Total: 8838				**Total: 2613**			

When the contents of these are examined, it is possible to say that their interdisciplinary studies have started to increase.

Mathematics Village established in İzmir/Şirince in 2007 and Çakılarası Mathematics Village established in Eskişehir in 2016 were opened, creating environments for doing and learning mathematics intertwined with nature.

Figure 2. *A picture from Çakılarası Mathematics Village*

In addition to the Turkish Mathematics Association established in 1948 and the Mathematicians Association in 1995, women studying in the field of mathematics established the Turkish Women Mathematicians Association in 2012 (Figure 2).

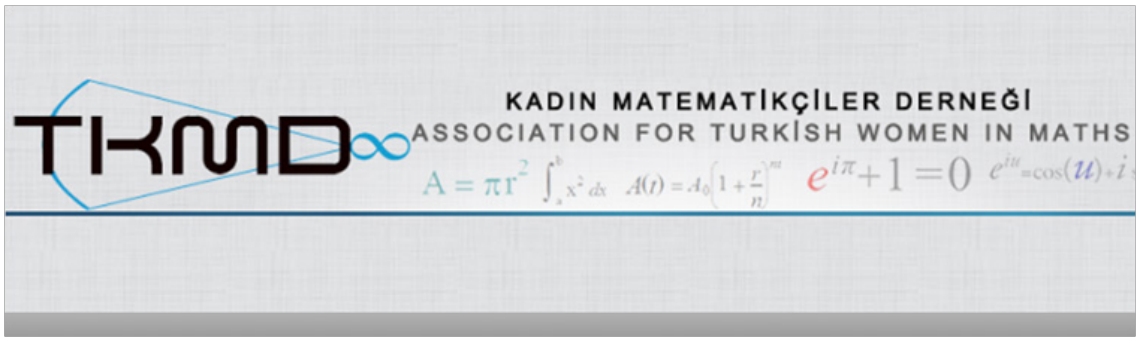

Figure 3. *Turkish women mathematicians association*

In 2012, in addition to these associations established by mathematicians, the Mathematics Education Association began to operate specifically for mathematics education.

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Chapter 3

DEVELOPMENT OF SOCIAL STUDIES COURSE IN TURKEY: 2000-2020 PERIOD

DEVELOPMENT OF SOCIAL STUDIES COURSE IN TURKEY: 2000-2020 PERIOD

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INTRODUCTION

Since its emergence in the world, social studies course seeks an answer to the question, "How should a good citizen be?". From the perspective of Turkey, it has undergone major changes from 1968, when it was started to be taught as a course, to the 2000s. In this sense, the last major change in the name of social studies course in Turkey before the 2000s was realized in 1998. In fact, in 1998, the transition to eight-year uninterrupted compulsory primary education, to be implemented from the 1998-1999 academic year, was accepted with the law no 4306 dated 18.08.1997 (Turan, 2016, p. 269). This situation brought the reunification of the social studies course, which was divided as "national history", "national geography" and "civics" with the change made in the 1980s, under the same name. Starting from the 1998-1999 academic year, it was decided to deliver "social studies" for 3 hours a week in the 4th, 5th, 6th and 7th grades of primary schools (MoNE, 1998, Safran, 2011). Accordingly, a number of arrangements have been made regarding both the class-level distribution and the subject and content. Due to the removal of the primary and secondary school concepts with the transition to primary education, the content was arranged in a spiral and blended manner at the level of four classes from the 4th to the 7th grade. In this respect, the subject repetitions encountered in previous curriculums have largely eliminated. Depending on all these changes, the social studies course has once again taken its place among the core courses in the Turkish national education system (Ablak, 2020; Akman, 2016).

In this section, the development of the social studies course in Turkey from the beginning of the 2000s to the present is discussed. In this context, the prorams, which were put into practice between the specified dates, the 2005 Social Studies Curriculum (SSCC) prepared in 2004 and published in 2005 and the 2018 Social Studies Curriculum (SSCC) prepared in 2017 and published in 2018, were tried to be examined in all aspects.

1. 2005 PRIMARY SOCIAL STUDIES COURSE CURRICULUM

The social studies course curriculum, which was put into practice in 1998 and was basically prepared on progressivism and reconstructionism, remained in practice for a short time. With the beginning of the 2000s, the social studies course curriculum started to be changed in 2004 due to the rapid changes in education in the world and the inadequacy of the current curriculum in Turkey (Ata, 2012; Kılıçoğlu, 2009). In this context, the social studies course curriculum, unlike the behavioral education approaches adopted in previous curriculums, focuses on the student and the activity, actively involves the student in the education and training process, adopts the principle of students' learning by doing and experiencing, rather than presenting literal information; it has been shaped with a student-centered constructivist approach at every point, from where the information is and how to access it (Ablak, 2018; Sözen and Ada, 2018; Tay, 2017). This situation covered not only the social studies course but also all the "primary education" courses in the specified period.

The social studies course curriculum prepared in 2004 was implemented as a pilot scheme in the 2004-2005 academic year. From the 2005-2006 academic year, it has been started to be implemented all over Turkey (Özdemir, 2009). As the justification for the development of the 2005 social studies course curriculum; *"There has been a change and development in the individual, social and economic fields all over the world. In our country, it is possible to see this change and development in the demographic structure, the quality of the family, life styles, production and consumption patterns, scientific understanding, gender, information technology, business relations and the quality of the workforce, localization and globalization processes. It has become a necessity to reflect all these changes and developments in our education system and programs. "The prepared program takes into account all these changes and developments in the world, as well as the results of the evaluations of the existing programs and the needs analysis"* (MoNE, 2005a). The 2005 Social Studies Course Curriculum differed from previous programs in terms of its structure, approach and basic philosophy (Sözen and Ada, 2018). In this respect, unlike the approaches adopted in the previously implemented curriculum, it is seen that the "Constructivist" approach has been adopted in line with an approach that supports and develops active participation in life, making the right decision, and problem solving, taking into account the value of knowledge and the existing experiences of the individual (MoNE, 2005a). As a justification for this situation, in the 2005 Social Studies Curriculum, *"With this approach, a new understanding is tried to be implemented that is student-centered, therefore activity-centered, that balances knowledge and skills in terms of social studies, and that allows students to interact with the environment by taking into account their own experiences and individual differences. "*(MoNE, 2005a) statements are included. On the other hand, the 2005 curriculum, contrary to the previously implemented curriculum, has adopted all 3 traditions and reflected these traditions in the program structure was introduced by Barr, Barth, and Shermis in 1977;

1. Social studies as citizenship transfer,
2. Social studies as Social Sciences,
3. Social studies as reflective thinking

The 2005 Primary Education Social Studies Course Curriculum has been prepared for the 4th and 5th grades, with three course hours per week, for a total of 108 hours in 36 weeks for each grade. A total of 17 objectives are included under the general objectives of the program. This program, which was put into practice in 2005, is analyzed below under its main headings.

A. SKILLS

Skills are abilities that are designed to be acquired, developed and transferred to life in students during the learning process (MoNE, 2005a). It is seen that in the curricula of developed countries in the world, skills and acquisitions aimed at gaining skills are given weight (Ablak, 2019). Skill training is among the basic building blocks of the Social Studies Course Curriculum prepared and implemented after 2000. Because skills training is considered necessary for individuals to actively participate in social life and to maintain their lives (Deveci, 2015; Şimşek and Öztürk, 2014). In Turkey, skills training was included for the first time in 2005 SSCC within the scope of social studies course. In this context, in 2005 SSCC, a total of 15 skills, 9 of which are specific to the field of social studies, and 6 of which are specific to the field of social studies, are included in the primary education (4-8th grade) level. These skills are listed in the Curriculum as follows:

Aimed to be Included with Other Courses

1. Critical Thinking Skill
2. Creative Thinking Skill
3. Communication Skill
4. Research Skill
5. Problem Solving Skill
6. Decision-Making Skill
7. Ability to Use Information Technologies
8. Entrepreneurial Skill
9. Ability to Use Turkish Correctly, Eloguently and Effectively

Accepted Specific to Social Studies Courses

1. Observation Skill
2. Ability to Perceive Place
3. The Ability to Perceive Time and Chronology
4. Ability to Perceive Change and Continuity
5. Social Participation Skill
6. Empathy Skill

These skills listed above in the curriculum were determined and given as "skills to be delivered directly" according to the learning areas at each grade level. On the other hand, many related skills were determined in the sub-dimension of each skill and these skills were associated with the gainings/subjects.

B. CONCEPTS

The concepts that we can call the "building blocks of knowledge" in the learning-teaching process appear as another important dimension of the 2005 SSCC. Concepts are a mental structure developed from phenomenon. "Concept" is the form that defines the common features of objects, people, feelings or ideas and is expressed with language (MoNE, 2005a). Considering the fact that learning is based on concepts, it is known that concept teaching provides multi-faceted benefits. First of all, concept teaching facilitates both learning and remembering by having a positive effect on students' academic success (Doğanay, 2003). In the 2005 SSCC, it is seen that 91 concepts are included in the 4th grade, 121 in the 5th grade, 145 in the 6th grade, and 157 in the 7th grade, according to the grade level. Considering these ratios, it is seen that the number of concepts aimed to be taught increases as the grade level increases. On the other hand, these concepts were linked in a spiral way between classes and processed at 3 levels as "introduction level", "development level" and "reinforcement level" in the program.

C. VALUES

Another important topic that stands out in SSCC which was put into practice in 2005 is values. Value is a common thought, purpose, basic moral principle or belief that is accepted by the majority of its members to ensure and maintain its existence, unity, functioning and continuation of a social group or society (MoNE, 2005a). After the 2000s, it is seen that value education is given importance not only in Turkey but also in many countries of the world. Value education in Turkey has started to be dealt with in a planned manner since 2004, and the concept of value has started to be explicitly mentioned in curricula especially after this date in Turkey (Ulusoy and Arslan, 2016). In this context, 20 values that are planned to be gained by the students during the teaching process are included in the 2005 SSCC. These values are as follows:

- ✓ Being Fair
- ✓ Peace
- ✓ Solidarity
- ✓ Aesthetic
- ✓ Freedom
- ✓ Love
- ✓ Patriotism
- ✓ Giving Importance to Family Unity
- ✓ Being Scientific
- ✓ Sensitivity
- ✓ Tolerance
- ✓ Giving importance to being healthy
- ✓ Responsibility
- ✓ Benevolence
- ✓ Independence
- ✓ Diligence
- ✓ Honesty
- ✓ Hospitality
- ✓ Esteem
- ✓ Hygene

When the curriculum is examined, it is seen that the values given above are associated with learning areas at every grade level from the 4th grade to the 7th grade and are determined as "the value to be given directly".

D. LEARNING AREAS

Learning areas can be shown as one of the main innovations that stand out in the 2005 SSCC. While a unit/subject-based approach was adopted in previous curriculums, it is seen that a learning area/unit-based approach was adopted with the 2005 curriculum. The learning area is defined as a structure that organizes learning in which interrelated skills, themes, concepts and values can be seen as a whole (MoNE, 2005a). When the 2005 SSCC is examined, it is seen that the learning areas are in a structure that continues from the 4th grade to the 7th grade. In other words, learning areas are designed to expand as the grade level increases (Yazıcı and Koca, 2011). For example, the "Culture and Heritage" learning area was given in the 4th grade with the "Learning My Past" unit to cover basic history concepts. In the 5th grade, it is seen that the scope of the same learning area has expanded with the unit "Step by Step Turkey". On the other hand, it is seen that each learning area includes one or more social science disciplines. The learning areas in the 2005 SSCC are given below:

Table 1. Learning Areas and Associations in 2005 SSCC

LEARNING AREAS	ACADEMIC DISCIPLINE ASSOCIATIONS
Individual and Society	Psychology, Civics
Culture and Heritage	Archeology, Anthropology, History, Civics
People, Places and Environments	Geography
Production, Distribution and Consumption	Economy
Time, Continuity and Change	*
Science, Technology and Society	Interdisciplinary Area
Groups, Institutions and Social Organizations	Sociology, Law, Civics
Power, Management and Society	Sociology, Law, Civics
Global Connections	Interdisciplinary Area

**Time, Continuity and Change learning area is given in a way to cover all learning areas.*

When the 2005 SSCC is examined, it is seen that 9 learning areas are included in the 4th and 5th grade levels, while 7 learning areas are included in the 6th and 7th grade levels. The learning areas of "Time, Continuity and Change" and "Groups, Institutions and Social Organizations" at both grade levels in 6th and 7th grades were considered as other learning areas.

A. UNITS

It is seen that the unit perspective is continued in the 2005 SSCC as in the previous curriculums. However, unlike the curriculum before 2000, the units were arranged in a spiral structure according to the characteristics of the students and with a multidisciplinary approach, instead of being associated with a single discipline in the form of history, geography or civics. "In this context, it can be said that social studies units are formed through the information produced by social sciences such as history, geography, economics, sociology, anthropology and their organization with civics subjects in the theme center" (Tay, 2017). In this context, it is seen that while 8 units are included in the 4th and 5th grade levels in the 2005 SSCC, 7 units are included in the 6th and 7th grade levels.

B. GAINS

One of the main innovations that stand out in the 2005 SSCC is the gains. In this respect, "target-behaviors" in every field in previous curriculums have left their place to gains in this program. Acquisition is defined as the knowledge, skills, attitudes and values that students are expected to acquire through planned and organized experiences in the learning process (MoNE, 2005b). When the acquisitions included in the curriculum are examined, it is stated in simple present tense and precise manner as "…makes, …does, …shows". Below are the learning areas, units, gain numbers, values to be given directly and skills at the 4th, 5th, 6th and 7th grade levels in the 2005 SSCC in tables.

4th Grade

LEARNING AREA	UNITS	GAIN NUMBER	THE VALUE TO BE GIVEN DIRECTLY	THE SKILL TO BE GIVEN DIRECTLY
Individual and Society	Getting know myself	6	Respect for feelings and thoughts, Tolerance	Recognizing and using evidence
Culture and Heritage	Learning my past	6	Respect for Turkish elders, Giving importance to family unity, Patriotism	Planning and writing information in usable formats
People, Places and Environments	The Place We Live	8	Love of Nature	Perception of place
Production, Distribution and Consumption	From Production to Consumption	7	Giving importance to hygene and being healthy	Reading tables, diagrams and graphs

Science, Technology and Society	Glad to there is	6	Scientificity	Making comparison
Groups, Institutions and Social Organizations	All Together	5	Benevolence	Identifying the cause-effect relationship
Power, Management and Society	People and Management	4	Independence	Making decision
Global Connections	My Friends at Far	4	Hospitality	Using library and reference resources

In the table above, the general structure at the 4th grade level in 2005 SSCC is given. In this sense, it is seen that a total of 46 gains are included in the context of 8 learning areas at the 4th grade level. The time/class hours allocated to the units were determined according to the percentages of the gains in the learning areas.

5th Grade

LEARNING AREA	UNITS	GAIN NUMBER	THE VALUE TO BE GIVEN DIRECTLY	THE SKILL TO BE GIVEN DIRECTLY
Individual and Society	Learning my rights	4	Responsibility	Written expression
Culture and Heritage	Step by step Turkey	6	Aesthetic	Using visual evidence
People, Places and Environments	Getting know our region	8	Sensitivity to the natural environment	Observation
Production, Distribution and Consumption	Things we produced	7	Diligence	Interpreting simple statistics data
Science, Technology and Society	Realized Dreams	6	Academic honesty	Using library and reference resources
Groups, Institutions and Social Organizations	Those working for community	5	Solidarity	Social participation
Power, Management and Society	One Country One Flag	5	Being Fair, Respect for the Flag and the National Anthem	Using and evaluating printed and visual resources

Global Connections	Our World	6	Sensitivity to historical heritage	Distinguish between facts and thoughts

In the table above, the general structure at the 5th grade level in 2005 SSCC is given. In this sense, it is seen that a total of 47 gains are included in the context of 8 learning areas at the 5th grade level. The time/class hours allocated to the units were determined according to the percentages of the gains in the learning areas.

6th Grade

LEARNING AREA	UNITS	GAIN NUMBER	THE VALUE TO BE GIVEN DIRECTLY	THE SKILL TO BE GIVEN DIRECTLY
Individual and Society	I'm learning social studies	6	Scientificity	Making Scientific Generalizations
Culture and Heritage	Turks on the Silk Road	9	Sensitivity to historical heritage	Inference
People, Places and Environments	Life on Earth	7	Sensitivity to the natural environment	Reading Maps and Using Atlas
Production, Distribution and Consumption	Our Country's Resources	6	Responsibility	Entrepreneurship
Science, Technology and Society	Electronic Century	5	Diligence	Creativity
Power, Management and Society	The Adventure of Democracy	5	Respect for Rights and Freedoms	Social Engagement
Global Connections	Our Country and the World	5	Benevolence	Research

In the table above, the general structure at the 6th grade level in 2005 SSCC is given. In this sense, it is seen that a total of 43 gainns are included in the context of 7 learning areas at the 6th grade level. The time/class hours allocated to the units were determined according to the percentages of the gains in the learning areas.

7th Grade				
LEARNING AREA	**UNITS**	**GAIN NUMBER**	**THE VALUE TO BE GIVEN DIRECTLY**	**THE SKILL TO BE GIVEN DIRECTLY**
Individual and Society	Communication and Human Relations	6	Respect for Differences	Communication
Culture and Heritage	Journey in Turkish History	8	Aesthetic	Distinguish historical facts and interpretations
People, Places and Environments	Population in our country	5	Patriotism	Graphics preparation
Production, Distribution and Consumption	Economy and Social Life	6	Honesty	Historical Empathy
Science, Technology and Society	Science in Time	5	Scientificity	Perceiving time and chronology
Power, Management and Society	Living Democracy	5	Being Fair	Make decision
Global Connections	Bridges between Countries	4	Peace	Noticing stereotypes

In the table above, the general structure at the 7th grade level in 2005 SSCC is given. In this sense, it is seen that a total of 39 gains are included in the context of 7 learning areas at the 7th grade level. The time/class hours allocated to the units were determined according to the percentages of the gains in the learning areas.

1. 2018 SOCIAL STUDIES COURSE CURRICULUM (4-7th GRADES)

The social studies course curriculum, which started to be implemented in Turkey in 2005, remained in use for many years with partial changes. In this sense, the first radical revision in 2005 SSCC was realized in 2009.

With the change made in the education system in Turkey in 2015, the 4+4+4 model was adopted and compulsory uninterrupted education was extended to 12 years. In this context, revision studies were also carried out for the curriculum. In 2015, a new curriculum was prepared for the social studies course. However, this program has not been published and implemented (Çiydem and Kaymakçı, 2020). In 2017, the social studies course curriculum was renewed due to the fact that the current curriculum could not fully meet the requirements of the age and that the changes in the programs were inevitable over time (Tay, 2017). This program, prepared in 2017, was printed with partial revisions in

2018. These program renewal studies did not only cover the social studies course, but also many other secondary school curriculums were renewed in the relevant period. For program renewal studies, following statements are included:

- ✓ *Curriculums of different countries that have been renewed and updated for similar reasons in recent years have been examined,*
- ✓ *Academic studies on education and programs at home and abroad were scanned,*
- ✓ *Especially our Constitution, relevant legislation, development plans, government programs, council decisions, programs of political parties, reports prepared by non-governmental organizations and civil research institutions, etc. documents analyzed,*
- ✓ *The opinions of teachers and administrators on the programs and weekly course schedules were collected through questionnaires developed by the programs and teaching materials departments of the Ministry of National Education,*
- ✓ *Group reports related to each branch coming from the provinces were examined,*
- ✓ *Survey data consisting of open-ended questions for branches and made available in electronic media were compiled,*
- ✓ *The reports prepared by our education faculties on the scale of branches were examined,*
- ✓ *All opinions, suggestions, criticisms and expectations were evaluated by study groups consisting of expert personnel, teachers and academicians from the relevant units of our Ministry. In line with the determinations made, our curricula have been reviewed, updated and renewed (MoNE, 2018).*

This program has been put into practice throughout the country as of the 2018-2019 academic year. The 2018 Social Studies Curriculum was prepared in a narrower scope compared to the 2005 curriculum. In this respect, many titles are not covered in detail. It is seen that many titles coincide with the 2005 SSCC in terms of structure. When the 2018 SSCC is considered in terms of the adopted tradition, it is seen that there has been a change. For this purpose, In 2018 SSCC *"The understanding of "social studies as social sciences" and "social studies as reflective thinking" should be given importance. "The scientific methods used by social scientists (geographers, historians, etc.) should be introduced to students. By making use of the events inside and outside the school, students should be frequently compared with real life problems and contradictory situations, and they should be made to think reflectively on the social problems they encounter" (MoNE, 2018)*statements are included.

A total of 18 objectives were included in the program under the title of "special objectives of the social studies course". This program, which was put into practice in 2018, is analyzed below under its main headings.

SKILLS

Within the scope of social studies course, skills training in Turkey appeared for the first time in the curriculum implemented in 2005. It was also included in the 2018 SSCC under the title of skills. From this point of view, it is seen that many of the skills included in the 2005 SSCC retain their place in the 2018 SSCC. One of the main changes that stand out under the skill heading in the 2018 SSCC is the joint handling of skills. From this point of view, skills in the 2005 SSCC are handled in a two-dimensional structure as “Skills Aimed to be given with Other Courses” and “Skills Specific to Social Studies Course”. Another change in the 2018 SSCC in terms of skills is the total number of skills included in the program. In this respect, while a total of 15 skills were aimed to be acquired by the students in the 2005 SSCC, the number of skills aimed to be acquired by the students in the 2018 SSCC was increased to 27. Another striking fundamental change in the context of skills in the 2018 SSCC was the detailed coverage of “literacy” type skills. On the other hand, it is seen that the skills included in the program are arranged in accordance with the "Turkish Qualifications Framework (TYF)" prepared in the framework of the “European Qualifications Framework” and stated in the objectives of the curriculum. Below are the skills that are included in the 2018 SSCC and are aimed to be acquired by students.

* Research	*Environmental literacy	* Perceiving change and continuity
*Digital literacy	*Critical thinking	* Empathy
*Financial literacy	*Entrepreneurship	*Observation
* Map literacy	*Legal literacy	*Communication
* Collaboration	* Recognizing stereotypes and prejudice	
*Using evidence	*Decision making	*Position analysis
*Media literacy	*Perception of space	*Self-control
*Political literacy	*Problem solving	*Social participation
* Drawing and interpreting tables, graphs and diagrams		* Innovative thinking
* Using Turkish correctly, delicately and effectively		*Perceiving time and chronology

When the 2018 SSCC is examined, it is seen that the skills are not directly related to the learning areas as in the 2005 SSCC. Instead, it is generally stated which skill will be gained in each learning area.

A. CONCEPTS

It is seen that the concept title that was included in the 2005 SSCC was not included in the 2018 SSCC. As a matter of fact, this situation has been one of the issues that the 2018 SSCC was criticized the most. In the curriculum, concepts are included only as follows: *"Concept teaching has an important place in the Program. For this reason, classifications and different concept teaching approaches should be considered in concept teaching. It should be helped to eliminate ambiguity, conceptual confusion and misconceptions. (MoNE, 2018)*

B. VALUES

With the 2000s, great importance has been given to values and value education in Turkey as well as in the world. In this context, values and value education were included in the 2005 SSCC for the first time. In the 2018 SSCC, it is seen that values and value education are given importance. In this context, following are included in the curriculum:*"Our values are the sum of the principles that form the perspective of the curriculum. Its roots are in our traditions and our past, its trunk and branches are fed from these roots and reach our present and future. Our values, which constitute our basic human characteristics, are the source of the power and power that enables us to take action in the routine flow of our lives and in coping with the problems we face."*(MoNE, 2018). It is seen that values are also included in the curriculum for other course disciplines, such as the social studies course curriculum prepared in 2018. In this context, the term "root values" stands out in the program. The "root values" in the curriculum are: justice, friendship, honesty, self-control, patience, respect, love, responsibility, patriotism, benevolence. These values will come to life both on their own, with the associated sub-values and with other root values in the learning-teaching process" (MoNE, 2018). The root values mentioned above are included in the values included in the social studies course curriculum. It is seen that a total of 18 values, including these values, are included in the curriculum. The values included in the 2018 SSCC are given below;

*Justice	*Giving importance to family unity	*Independence
*Peace	*Scientificness	*Diligence
*Solidarity	*Sensitivity	*Honesty
* Aesthetics	* Equality	* Freedom

*Respect * Love *Responsibility

* Saving *Patriotism *Benevolence

When the 2018 SSCC is examined, it is seen that the values are not directly related to the learning areas as in the 2005 SSCC. Instead, it is generally stated which value will be gained in each learning area.

C. LEARNING AREAS & GAINS

When the 2018 SSCC is examined, it is seen that there are a total of 7 learning areas at the 4-7th grade level. In this context, it can be said that there is a narrowing in learning areas according to the 2005 SSCC. Although it is in the 2005 SSCC, it is seen that the learning fields of "Time Continuity and Change, Groups, Institutions and Social Organizations and Power, Management and Society" are not included in the 2018 SSCC. On the other hand, it is striking that the "Active Citizenship" learning field, which could not included in previous programs, was included in the 2018 SSCC. In a sense, the Active Citizenship learning area was born from the combination of the "Groups, Institutions and Social Organizations" and "Power, Management and Society" learning areas.

When the 2018 SSCC is examined, it is seen that the title of "unit" was not included as in the previous programs. Instead, the gains were presented by directly associating them with the learning areas. In terms of gains, it is aimed to provide students with a total of 131 gains in the 4-7th grade range in the 2018 SSCC. From this point of view, it is seen that the gains in 2018 SSCC are less compared to 2005 SSCC. Because, in the 2005 SSCC, a total of 175 gains aimed to be provided to 4-7th grade students. Below are the learning areas and the number of gains at the 4-7th grade level.

GRADES	**NUMBER OF GAINS**			
LEARNING AREA	**4th GRADE**	**5th GRADE**	**6th GRADE**	**7th GRADE**
INDIVIDUAL and SOCIETY	5	4	5	4
CULTURE and HERITAGE	4	5	5	5
PEOPLE, PLACES and ENVIRONMENTS	6	5	4	4
SCIENCE, TECHNOLOGY and SOCIETY	5	5	4	4
PRODUCTION, DISTRIBUTION and CONSUMPTION	5	6	6	6
ACTIVE CITIZENSHIP	4	4	6	4
GLOBAL CONNECTIONS	4	4	4	4
TOTAL	33	33	34	31

CONCLUSION

Social Studies Course, which was started to be taught as a course for the first time in Turkey in 1968 (İnan, 2014; Öztürk and Otluoğlu, 2003; Safran, 2011; Sağlamer, 1997; Sönmez, 1998;) has undergone periodic changes in the process. At the end of the 20th century, it took its place again in the Turkish Education System as a course under the same name in 1998. With the implementation of the eight-year uninterrupted compulsory primary education in 1997, which has been discussed for many years in Turkey, a second birth realized in the name of social studies course. Thus, social studies education, which has been given in parts under different courses since 1985, has started to be given by combining it under the social studies course since 1998 (Ablak, 2020).

With the 2000s, the social studies course curriculum was renewed in 2004, in line with the rapid change in the world and the need to revise the curriculum. This program was published and implemented in 2005. The 2005 SSCC was of great importance in terms of both reflecting the constructivist approach and reconsidering social studies with an interdisciplinary approach (Akpınar and Kaymakçı, 2012). The 2005 SSCC, which is one of the programs that remained in use for the longest time among the social studies curriculum implemented in Turkey, underwent a change again in 2017. In 2018, the curriculum prepared in 2017 was revised and published. This program has been implemented since the 2018-2019 academic year. Some titles that were not included in previous programs were added to the 2018 SSCC, which is simpler than the 2005 SSCC. In this context, one of the most striking differences was the title of "competencies". Accordingly, a total of 8 key competencies were included in the 2018 SSCC. These competencies are: "Communication in Mother Tongue, Communication in Foreign Languages, Mathematical competence and basic competences in science/technology, Digital competence, Learning to learn, Social and civic competences, Taking initiative and entrepreneurship, and Cultural awareness and expression" (MoNE, 2018).

The most fundamental investments of states for the future are undoubtedly investments in education. In this respect, it is likely that in the near future, program revision or renewal studies will be carried out for the social studies course in Turkey. Because, increasing the quality and qualification in educational activities depends on the development or renewal of the curricula depending on the requirements.

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Chapter 4

THE PLACE OF GAME IN PRIMARY SCHOOL MATHEMATICS TEACHING AND DIGITAL GAME TOOLS

THE PLACE OF GAME IN PRIMARY SCHOOL MATHEMATICS TEACHING AND DIGITAL GAME TOOLS

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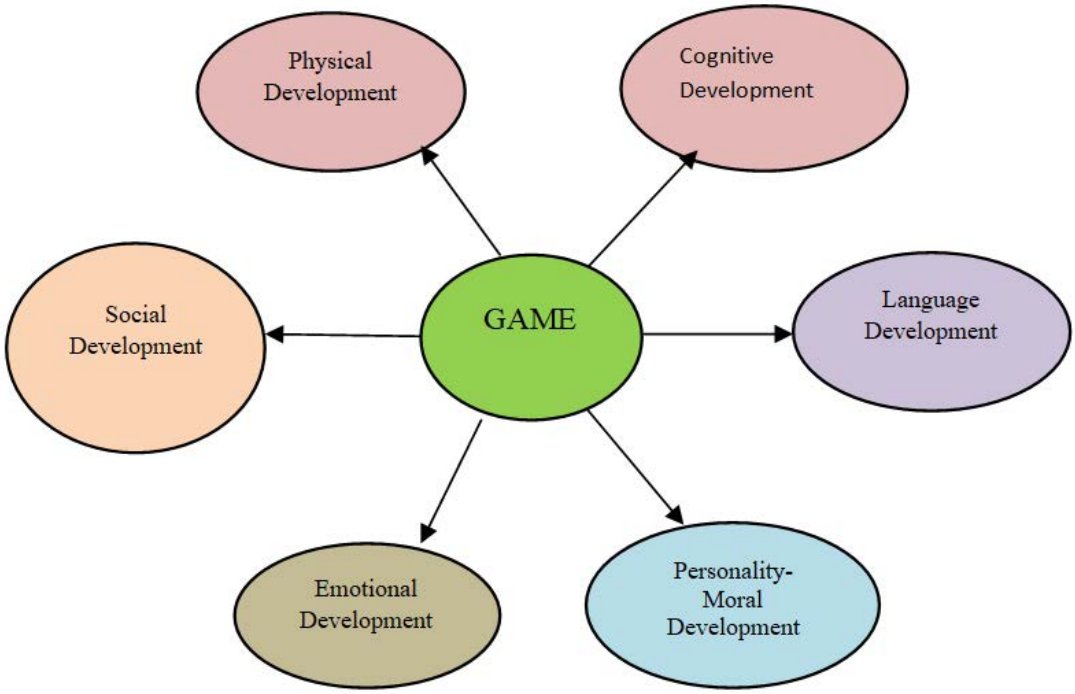
INRODUCTION

1. Definition of Game, Its Place in Children's Development and Education

The game stimulates all areas of development (language, mind, social, emotional, physical, personality and moral development) positively and forms the basis for the acquisition of skills (Tuğrul, 2015). Children develop social skills, thinking and life skills through play. Reflecting his/her life and thoughts in the game, the child feels free and happy in the game environment. A free and happy child can express himself without fear. In Figure 1, the areas affected by the game are given as titles.

***Figure 1**: Development Areas Affected by the Game*



Physical development: Jumping, balancing, carrying, etc. that the child performs during the game. Movements that require physical strength not only support motor development, but also help organs work regularly. Generally, outdoor games support the motor development of large muscles. In the motor development of small muscles, the child, who used his/her hands randomly before, now uses it purposefully. In the game, he/she gains

many skills such as holding scissors, buttoning, drawing with a pencil.

Social and emotional development: Game has an important place in terms of personality development and emotional development. The child learns some of his/her life experiences from the game or adds roles from his/her own life experience to the game. Waiting his/her turn during the game, taking responsibility for the role he/she takes, developing empathy with the role he/she takes makes the child more ready for life. Play is a way of relaxation for the child. Both an angry child's discharge of energy and a happy child's full of energy can be achieved through play, which is a healthy process. The child recognizes and trusts people in the game or has the opposite feeling. By choosing to take risks from time to time, the child experiences life in a micro sense.

Cognitive development: Game supports the child's problem solving, imagination and perception skills. In particular, symbolic play, which is widely used by children, has a great contribution. It is stated that symbolic play contributes to children's reading comprehension, awareness of abstract concepts and providing mathematical skills (Ailwood, 2010; Anita, 2006; Tuğrul, 2015). In addition to this, the child follows a certain order by moving in accordance with the rules of the game during the game. Makes mental comments about what they know and what they add new.

Language development: Games with dialogue, rhymes and songs help the child reach language proficiency by expanding their vocabulary. The child who can express himself/herself comfortably in the game environment is expected to have the same attitude in social life.

Personality and moral development: Children's personality traits can be easily identified during the play process (Pehlivan, 2016). The child who wants to be involved in the game can make some changes in himself/herself by making use of his/her observations. By making use of his/her observations in the game, he/she can soften his combative, incompetent aspects in order to be accepted by the society. It has the opportunity to experience tendencies such as reacting to injustice that may occur in the game. Especially in games with rules, the child may choose to shape his own behavior.

The contribution of the game to education is a fact known for centuries. Bandura, Erikson, Piaget, Vygotsky are just a few of the leading scientists who argue that the game contributes to education. Many rules that are difficult to teach a child can be taught more easily during play. Children unconsciously learn and adopt many rules and concepts such as decision making, ordering, arranging, learning, cooperation, sharing, helping others, and respecting the rights of others (Hoşgör, 2010). The educational benefits of the game can be listed as follows:

- It provides improvements in concept and skill acquisition.
- Learning becomes fun.
- It enables students to be active in the lesson.
- It provides an increase in communication between students.
- Encourages students to explore and examine.
- It enables the development of what has been learned
- It enables children to take risks and experiment.
- Offers the opportunity to work collaboratively.
- It enables him to apply the acquired skills (Uskan and Bozkuş, 2019).

Hutchings (2012), Sanford and Madill (2007) and Burguillo (2010) stated the success of the game in education in their studies. Some of these studies are as follows:

Sanford and Madill (2007) investigated the use of games in peer education. Trainers aged 11-16 were selected as peer educators and students were selected from primary school level. Researchers observed the lectures and conducted group sessions. As a result of the study, it was stated that the game is an "art" with many uses, rather than a lesson tool used to educate young people.

Burguillo (2010) investigated the effects of competition-based games on the classroom environment, students' motivation and their success. In this study, which was conducted with students whose average age is 20, it was concluded that the game played in the competition environment increased the motivation of the students. In addition, among the other results stated that the game provides positive contributions in terms of cooperative learning in the group, active participation of the students in the lesson, and self-discovery, as well as being beneficial in mathematics and artificial intelligence techniques.

Hutchings (2012) aimed to find the effects of the game in the field of education in his study. For this purpose, thirty studies in the field of education with games in primary, secondary universities and vocational education institutions were critically examined. As a result of the study, it was concluded that the games used as a planning and thinking method increased the motivation of both students and teachers. In addition, it was stated that this increase in motivation occurred not only in children but also in adult students.

In line with the studies, the game can be counted as one of the main techniques used to be more active in the education-teaching process. As a matter of fact, researchers have stated that children can learn the information they have experienced more easily and permanently instead of the information transferred directly (Tuğrul, 2015).

2. Game and Mathematics Teaching

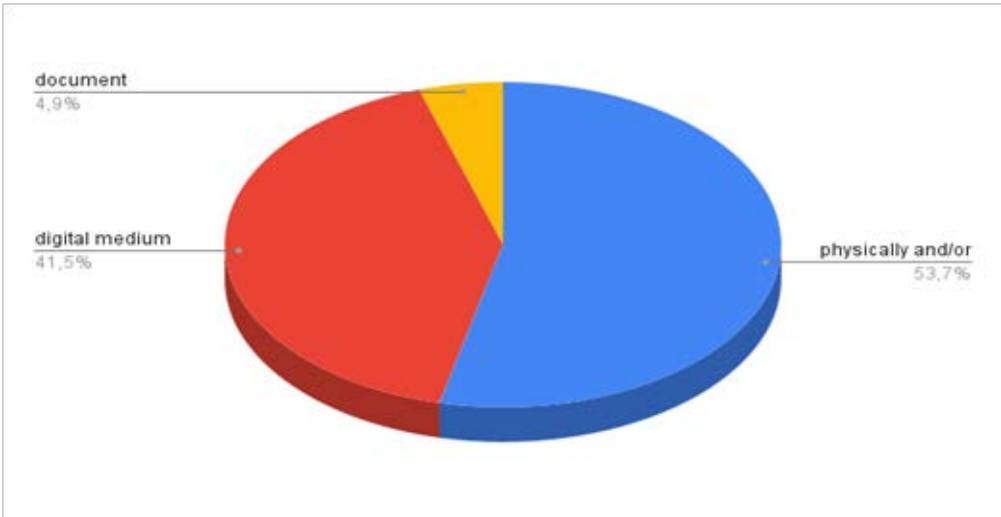
Today, science and natural sciences cover all scientific functions that can help human nature and studies that reveal them in line with predetermined goals. For centuries, humankind's curiosity about the events on earth and the effort to understand them has led them to be more interested in science day by day. From the past to the present, some of the branches of science considered to be the most important by people are mathematics, geometry, astronomy and medicine. The most important way of transferring science is education. Societies have given importance to education, which is the most effective way of transferring their knowledge to future generations. Education has been seen as a means of reaching the more beautiful, catching and exceeding the age. Therefore, education has gained importance.

In today's conditions, it is expected that the students who are educated in our education system have the ability to criticize, produce creative ideas, think multi-dimensionally and solve problems. In order to raise such students, mathematics teaching is also very important along with other courses. In this sense, the education given to the individual is also changing and developing in order to meet the learning needs of the individual who is trying to keep up with the developing technology.

Today, education moving away from giving ready-made information; it aims to raise individuals who can discover and acquire knowledge by researching (Güneş, 2010). At the point of experiencing difficulties in learning some lessons and perceiving those lessons as difficult; the methods and techniques used in education need to be revised, developed and renewed with criteria in the light of new theories. In the mathematics course, which is seen as one of the courses that is perceived as difficult today, it is a subject that should be investigated under which heading is difficult or missing. Many factors such as teacher characteristics (Toptaş et al., 2012), student readiness, method and technique of the lesson, applied curriculum (Ursini & Sánchez, 2008), measurement and evaluation can affect the success of the course. Determining the teaching methods and techniques suitable for the child is necessary for the success of the education. It is possible to determine the methods and techniques that will be beneficial in the game environment. The completely natural behavior of the student in the game environment will provide a resource for the teacher to make ideas about him/her. This observation will also be effective in determining the method and technique according to the students. In the light of the fact that the methods and techniques used have an important place in mathematics teaching, it is thought that teaching with games will be an alternative and will make the lesson fun and increase academic success. Games and activities are also important in terms of ensuring that learning is active and permanent by putting the student in the center (Güneş, 2010).

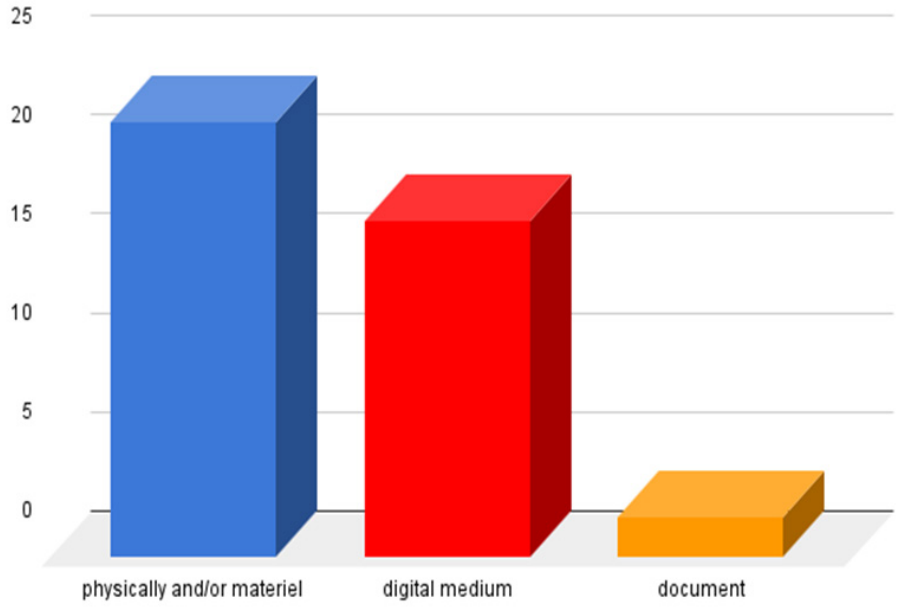
It is a known fact that children at primary school level are keen on playing games. Play is a fun activity in which children develop and train themselves in many ways while having fun. Students' learning by having fun will provide a basis for putting the acquired knowledge into a logical framework and for the child in competition to take his/her job seriously with a sense of responsibility and to provide full motivation. Learning games will be beneficial in contextualizing the course content and students applying it to their real lives (Abrams, 2009). There are some rules that take place within the scope of games, whether it is physical games or games that take place in digital environments. Within these rules, sorting, collecting points, sharing, finding the difference, etc. Many game rules support the achievements associated with mathematics lessons. Thus, the child can learn mathematics with pleasure in the game. He can also do his trial and error in the game environment without fear. As a matter of fact, there are studies in which the attitude towards the lesson and success are related to each other (Sarpkaya et al., 2011; Tabuk, 2019; Yenilmez, 2007). There are many studies on the use of games in teaching mathematics. Both in Turkey and in other countries, 41 studies examining the game in various ways in mathematics teaching have been reached. The content of the games used in the studies were examined and divided into two game types. One of them is the "digital medium", which provides an environment for the use of video or animation; computer, phone, tablet etc. There are types of games that require technical equipment, and the other are games with "physical and/or material" content that require the use of materials (papers, pens, beads, sticks, etc.) along with the physical strength of the children. The percentage distributions of the studies regarding the use of games in mathematics teaching are given in Figure 2, and the column chart is given in Figure 3.

***Figure 2**: Percentage Distribution of Studies on the Use of Games in Mathematics Teaching*



As can be seen in Figure 2, 53.7% of the studies consist of games that require physical power and/or make the use of materials active. The share of 41.5% includes games that take place in the digital environment. The 4.9% distribution belongs to studies with literature review.

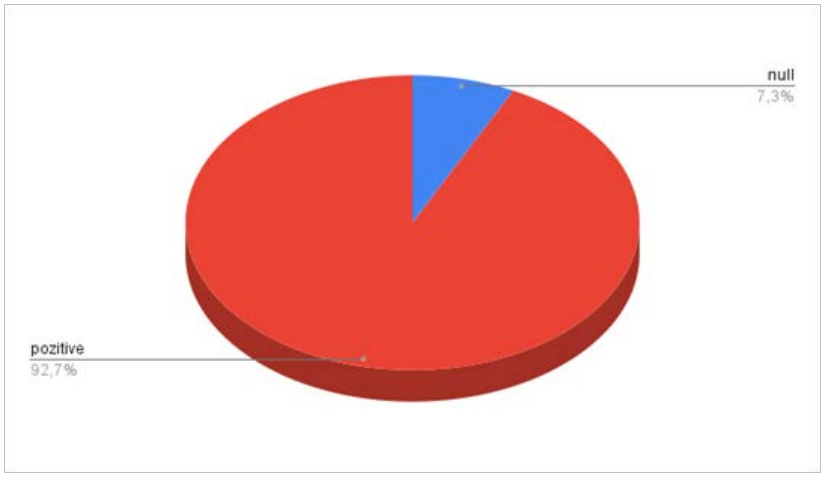
***Figure 3**: Column Chart Distribution of Studies on the Use of Games in Teaching Mathematics*



As can be seen in Figure 3, 22 of the studies involving the use of games in mathematics teaching are studies involving the use of "physical and/or material". 17 studies are game-based studies that take place in the “digital medium”, and two studies constitute the review of the literature.

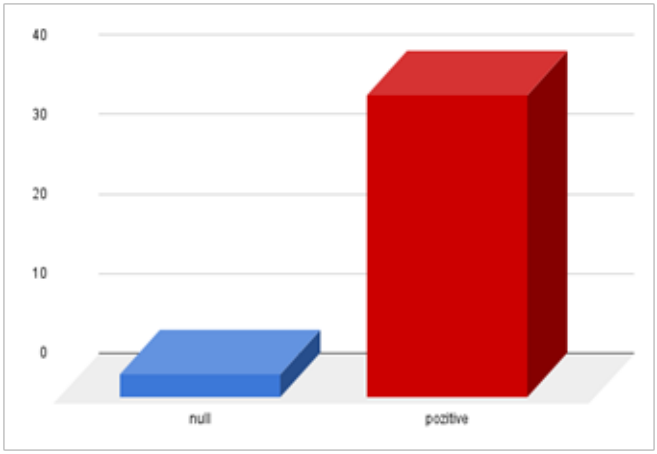
When the studies were examined, it was found that the different games used in teaching mathematics led to changes in students' achievements, motivations, attitudes and student outcomes. In the findings, the use of the game method in the mathematics lesson was examined and the effect of the student's attitude and success in at least one variable was evaluated as positive, while those who did not show any effect were noted as "ineffective". The positive or ineffective percentage distribution of the effects of the studies on student achievement and attitude is given in Figure 4 and the column chart is given in Figure 5.

***Figure 4**:Distribution of Positive and Ineffective Results of Game Studies in Teaching Mathematics*



As seen in Figure 4, 92.7% of the studies on the use of games in mathematics teaching showed that at least one of the students' "attitude and/or success" resulted positively. A share of only 7.3% showed that the use of games in mathematics teaching did not show any change in the variables of "attitude and/or success", that is, the use of games remained "ineffective".

***Figure 5**:Column Chart Distribution of Positive and Ineffective Results of Game Studies in Teaching Mathematics*



As shown in Figure 5, 38 of the studies on the use of games in mathematics teaching revealed a positive result in the "attitude and/or success" variable, while only three showed no change in any direction. This can be interpreted as the use of games in mathematics teaching will be a powerful method. The game in line with the results of the study; It can be accepted as a method that will be preferred in terms of affecting students' attitudes and success to a great extent and learning mathematics subjects by having fun.

It is seen that general teaching method techniques were used in primary education programs in Turkey, especially before the 2005 program. Among the methods used, there is mainly the narrative method. However, it is seen that the methods and techniques used in mathematics teaching have changed from year to year, and methods that can make students more active have begun to take place. In the 2005 Program, the teacher-centered teaching method was replaced by student-centered education. The adoption and implementation of the constructivist approach is seen in the teacher's guidebooks of the Ministry of National Education [MEB] in Turkey. In the guidebooks, besides the guidance on what the teacher can do, which tools will be needed during the activities is also listed. Thus, teachers can easily use these planned activities to activate the student. However, there may be some limitations in the application of game-based teaching in the classroom (Uskan & Bozkuş, 2019). In crowded classrooms, distance from the target, noise, and weaknesses in the teacher's control of the class may occur. It is important to plan the game correctly and implement it at the right time. A lot of effort falls on the teacher in the face of the problems encountered in practice. For this reason, it may be that it is not among the preferences of many teachers and instead traditional methods are used. However, it is important for the teacher to know that the knowledge consisting of experience cannot be

used healthily by the students during the application phase. Because of this situation, it will make the teacher willing to take an active part in the lesson.

3.Digital Game Tools That Can Be Used in Mathematics Teaching in the 21st Century

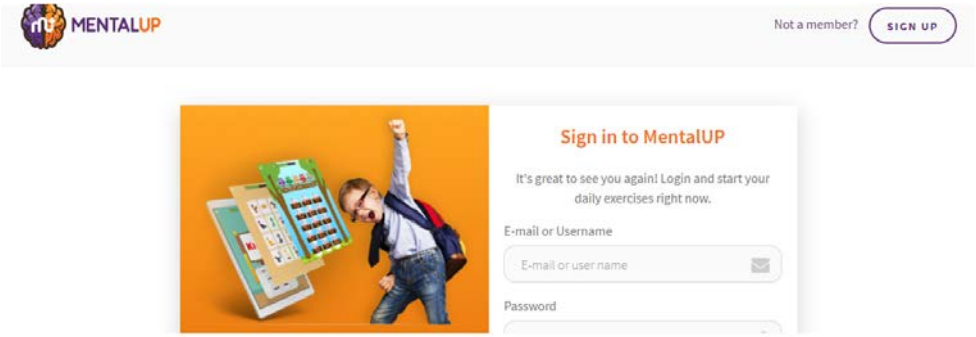
Although it is known that the games in which children take part both physically and spiritually will never lose their value, digital games are preferred recently. Digital games prepared for educational purposes contribute to the teaching of lessons and the teaching of concepts related to daily life. During the Covid-19 pandemic period, which the whole world was exposed to, students continued their lives and learning under home conditions. In these conditions, digital tools used for learning have gained a lot of popularity. In this process, digital games have affected their attitudes such as having fun in the lesson and liking the lesson, as well as obtaining the achievements related to the lesson. Digital environments are more in demand to make the lesson more fun and effective. Digital applications and web 2.0 tools have been created to be used in almost all courses. These web tools and applications have been tried to be developed in such a way that they can be used in the course of drawing attention, measuring, and teaching in the course. It has offered a versatile use in order to provide concept maps, digital stories, presentations, and measurement tools to be used in lessons or in daily life. Coding tools (Blockly, Coder Org., Scratch, Code.org, Algo Digital, Code Monkey, Kodable, Code club, Tynker, Blockly, Strach, Strach Jr Alice, Microsof Small Basic, Khan Academy, Coder Dojo, Microworlds JR), Web 2.0 tools and various digital applications (Kahoot, Slidely, Matific, Storyjumper, Plickers, Voki, Wordwall, MentalUP, Emaze, Canva, Quizizz, Powtoon, Storybird, Book Creator, Minecraft, Genially) are used in many teaching areas and age levels. The aforementioned tools are used in various ways in mathematics teaching by making use of their many features. In these applications and tools, ready-made applications can be used, as well as opportunities for the user to prepare it himself/herself in line with the needs. Thus, the user is a producer and can write books, install games, posters, etc., in line with the gain he wants, and can prepare materials to be used in the course, such as while preparing these materials, the user provides versatile development and learning. In order to enable students to acquire mathematics achievements in the form of games while having fun, a few digital tools are given below with examples of achievements in detail.

MENTALUP

It is defined as a gamified education platform and includes intelligence games. It is an application in Turkey. It is supported by the Scientific and Technological Research Council of Turkey [TUBITAK] and Yıldız Technical University. It supports the development of students' problem-solving skills, their analytical thinking, and the development of their numerical intelligence. The use of students between the ages of 4-13 is more intense and students of all ages can use it. The application can be

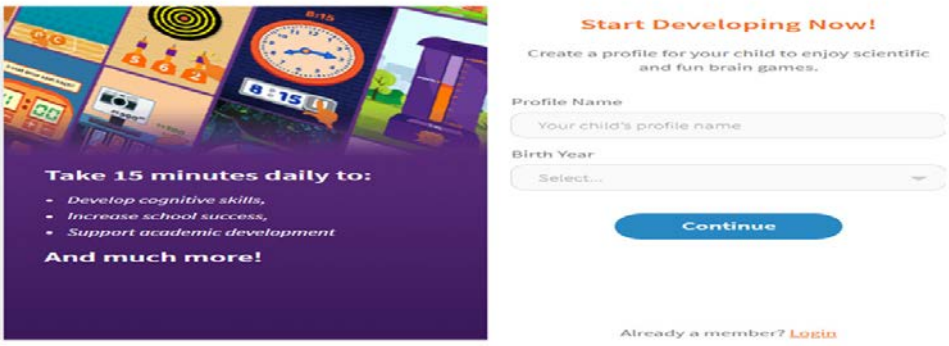
used comfortably on computers, phones and tablets. The app has more than 100 countries and more than 10 million users *(About MentalUP, 2021).* The application offers not only students but also physical and digital games that the student can play with all family members. In practice, the exercises are limited to 20 minutes per day to prevent students' screen addiction. It is necessary to become a member of the application at https://www.mentalup.co/. The registration screen is shown in Figure 6.

***Figure 6**: MentalUP Registration Screen*



You can start to become a member by pressing the SIGN UP text in Figure 6. The next step, recording screen 2, is given in Figure 7.

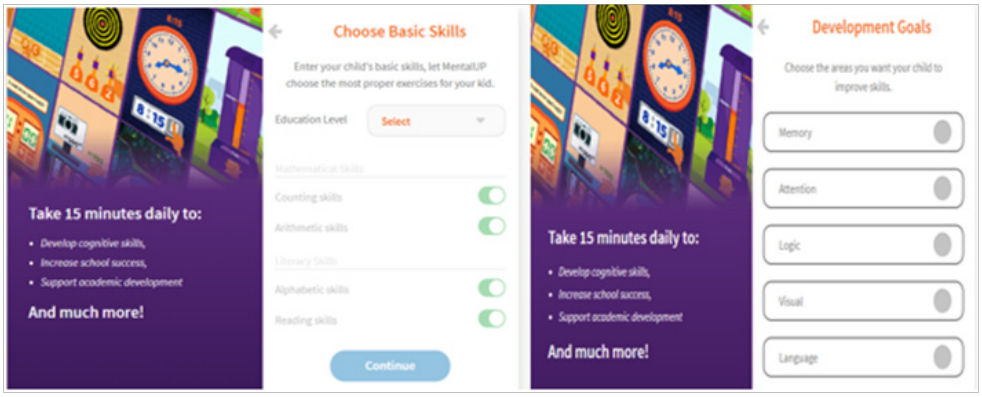
***Figure 7**: MentalUP registration screen 2*



You can proceed to the next stage by entering the name and date of birth of the student in Figure 7. A screen will appear to indicate the education level of the students. On this screen, it is necessary to indicate whether the student has arithmetic and counting skills related to the level of education he/she has, and whether he has reading skills according to the education level. A screenshot of this information is given in Figure 8. After the aforementioned stage, a screen will appear asking which skills the student would like to develop. The screenshot is given in Figure 9.

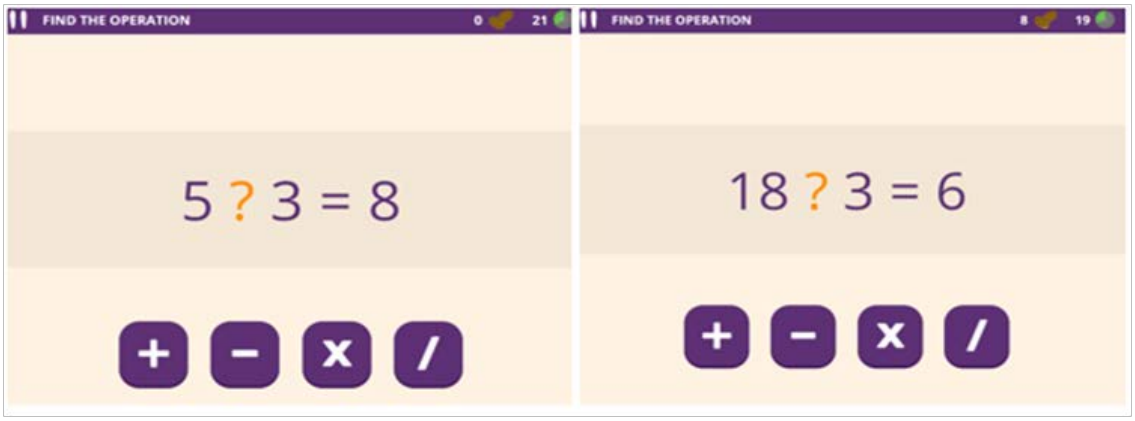
***Figure 8**:Identifying Student Mathematics and Reading Skills*

***Figure 9**:Selection of Targeted Skills in Students*



As can be seen in Figure 8 and Figure 9, the application can be used after selecting the acquired basic skills and the skills to be developed. The application can be played in a limited number of math-related sample games at the grade level without registering. The screenshot in Figure 10 is taken from a sample game.

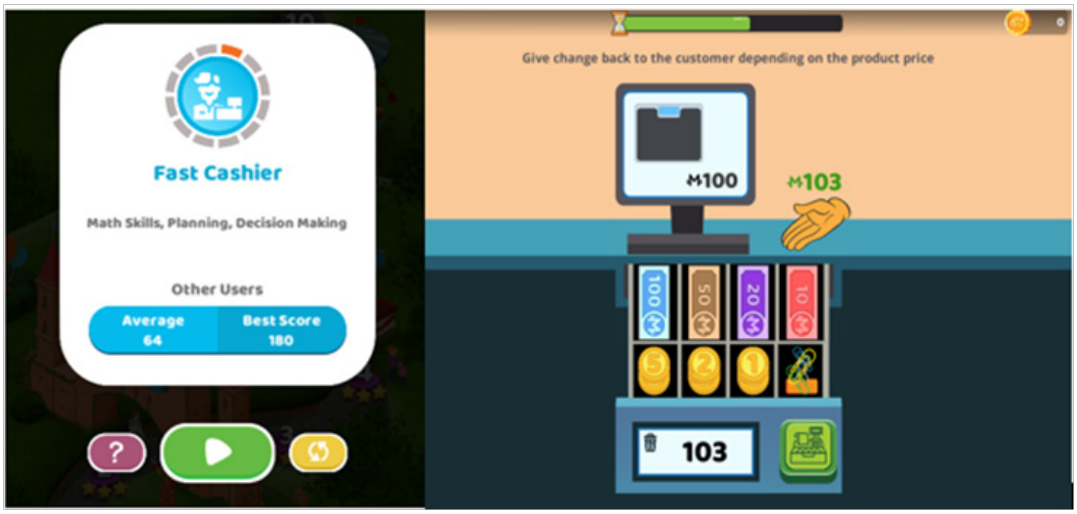
***Figure 10**: Game to Find the Executed Transaction (https://www.mentalup.co/samples/game/game34?)*



The game in Figure 10 is a game designed to improve arithmetic skills. He asks the students at this level to find out which operation is used from the four mathematical operations (addition, subtraction, multiplication, division) by paying attention to the result and the numbers used, using operation symbols. It is a game that can be used in accordance with primary school mathematics lesson outcomes.

Below are screenshots of a few games that support the development of math skills in the application. Figure 11 shows the "Fast cashier game".

***Figure 11**: Fast Cashier Game*



In the "Fast Cashier" game in Figure 11, a game was designed for students' mathematical skills, planning and decision making skills. It is to be able to quickly provide the amount specified in various ways, adhering to the price specified in the game. The student fulfills many math achievements in this game. Performing the mental addition process in line with the plan that the student will create in his mind, solving the numbers by taking into account (1 hundred + 3 ones), teaching the knowledge of step properties and equality (through the example: 103=100+1+1+1=50+50+2+1=50) It is possible to obtain many gains such as +20+20+10+2+1. In Figure 12, the find 10 game is included.

***Figure 12**: Find 10 Game*

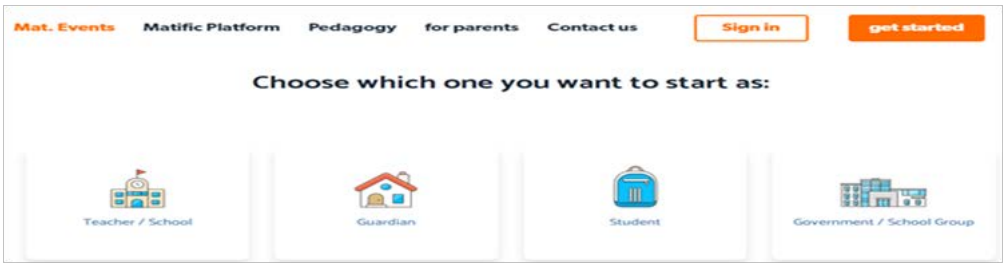
The "Find 10" game in Figure 12 was created to improve students' planning and visual attention as well as their mathematical skills. In this game, the user is asked to determine two numbers that add up to 10 within the specified time. Again, in this game, as in the other game, students learn the knowledge of equality. Single-digit numbers up to 10, falling from top to bottom, are used. Thus, the student chooses two different or same numbers

whose sum are 10 from the numbers up to 10 and try to equalize them to 10, which is the same result (like 10= 9+1=8+2=7+3=6+4=5+5). With the balls falling randomly and changing during the selection, the student will also realize that the addition has the property of change. For example, a student who chooses 6 first and then 4 will realize that the result will not change by choosing 4 first and then 6 while the game continues. Or, a student with this achievement will have the opportunity to practice what they have learned.

MATIFIC

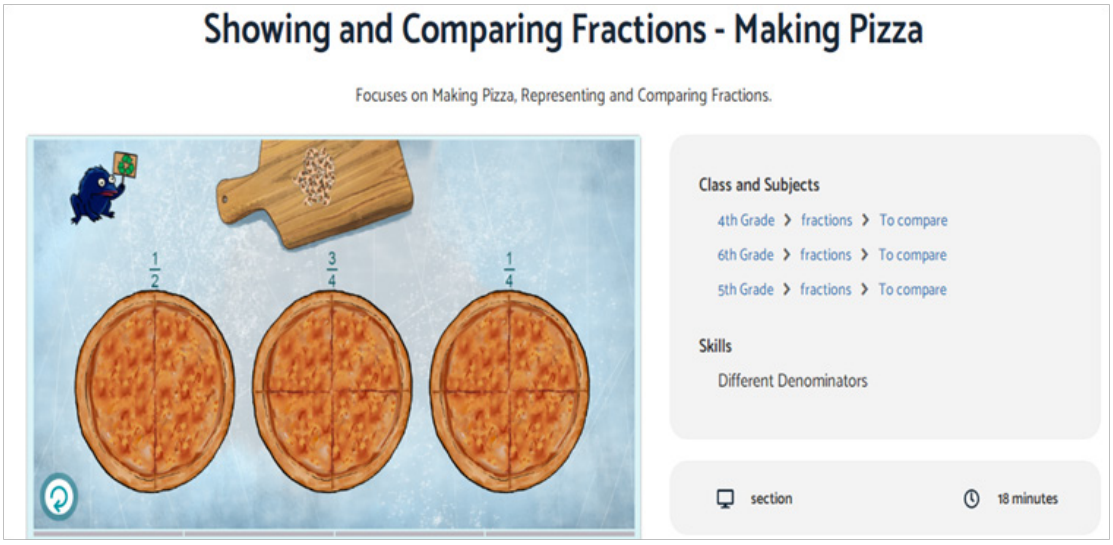
It is an application designed to contribute to students' meaningful learning of mathematical concepts, and to develop their critical thinking and algorithmic skills. Students can use it from computer and tablet. Internet is not mandatory as it has the feature of online and offline use. When the internet is used, the studies are updated in the application. It offers content suitable for the curricula of more than 50 countries and the application is used with the language of that country. It can also work integrated with the Google Classroom application (About Matific, 2021). Matific can be used by students, teachers, parents, school and school groups. Students can be given homework and their status can be easily followed by teachers. Graphics showing the performance differences between the use of Matific and the schools are available on the application's website. The application can be started with the “get started” button at the top of the page. The relevant screenshot is given in Figure 13.

Figure 1*3:Matitic Start Screen (https://www.matific.com/en/home/get-started/)*



In Figure 13, when the button is pressed, the user is asked to select one of the appropriate teacher, student, parent or institution options. Below are a few game activities. In Figure 14, a game image related to the subject of fractions, which is at the 4th grade level in Turkey, is given.

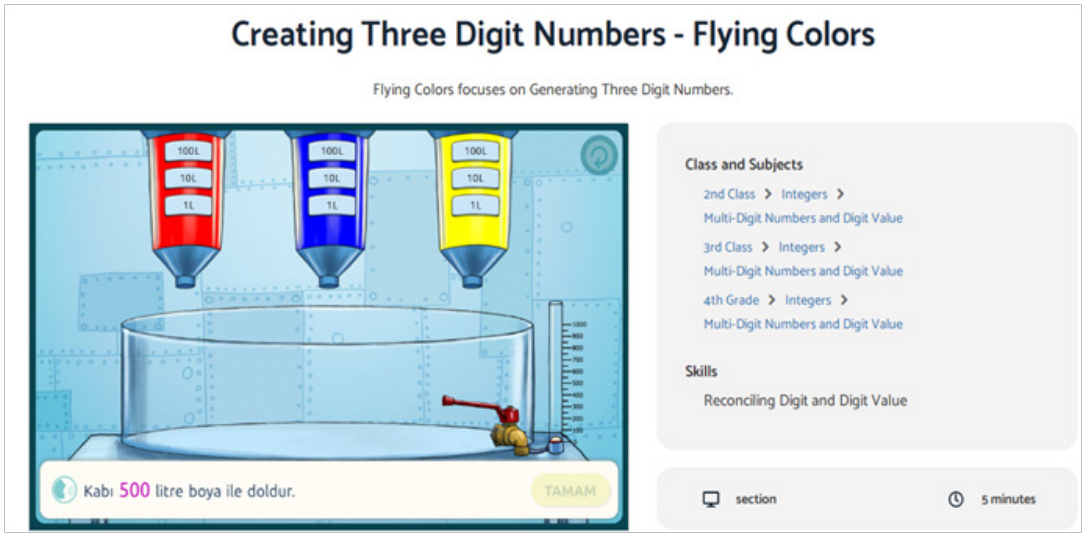
***Figure 14**: Showing and Comparing Fractions*



In the "Showing and Comparing Fractions" game in Figure 14, students are asked to show the specified fraction by adding materials and to rank the fractions according to their size and smallness characteristics. Thus, it is aimed for the student to realize the correct form of the fractions and the ordering of the fractions.

The "Showing and Comparing Fractions" game event can be accessed using the QR code on the side.In Figure 15, the game of flying colors is given.

***Figure 15**: Flying Colors*



In the "Flying Colors" game in Figure 15, the focus is on creating three-digit numbers. In the game, it is requested that the amount of paint is poured in the paint cubes and the pool is filled in this way. The student can reach the desired number in many different ways in this game. In order to reach a colorful result, the student may prefer to use a hundred units, sometimes using 10 units, or use 10 units when he/she can use one 10 units. This game will help student learn place values.

The "Flying Colors" game event can be accessed using the QR code on the left.

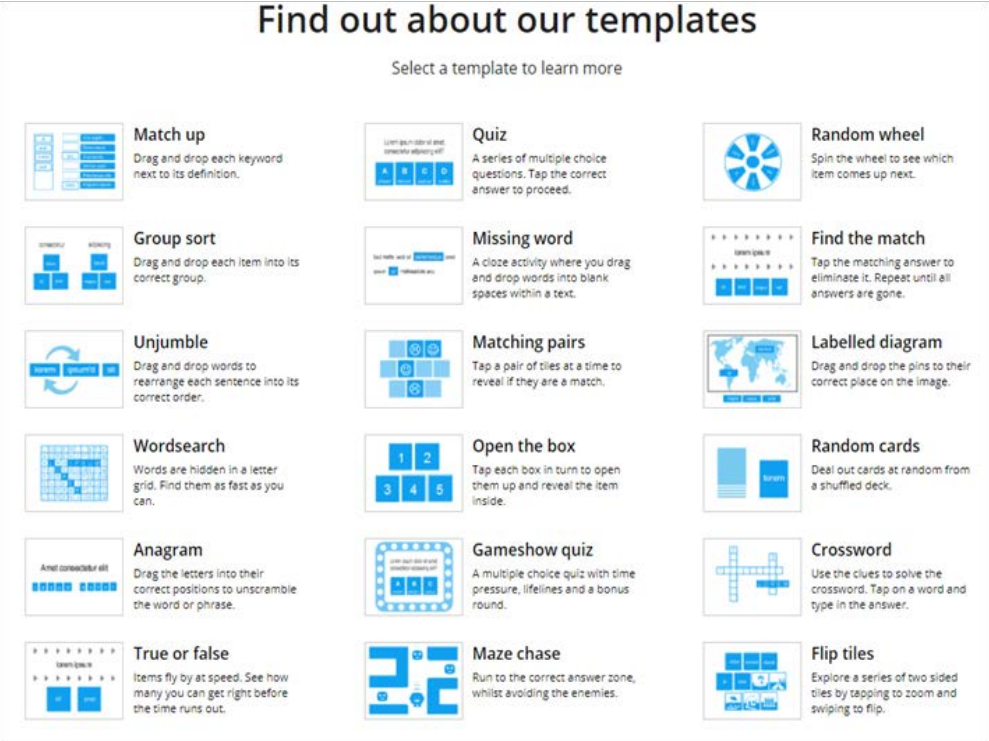
WORDWALL

Tutorial is an application where fun gamified interactive activities can be found and created. It is very clear that it will contribute to the teaching, practice and learning of many lessons, including mathematics, by having fun. In this application, it is possible to benefit from previously made events, as well as the user himself can create new events. The user can easily access the pre-made applications from the communities tab and perform the event (Wordwall, 2021). In addition, if the user wants to create a new game event, he must be a member. Figure 16 shows the screenshot of the login session.

***Figure 16**: Login Screenshot (https://wordwall.net/)*

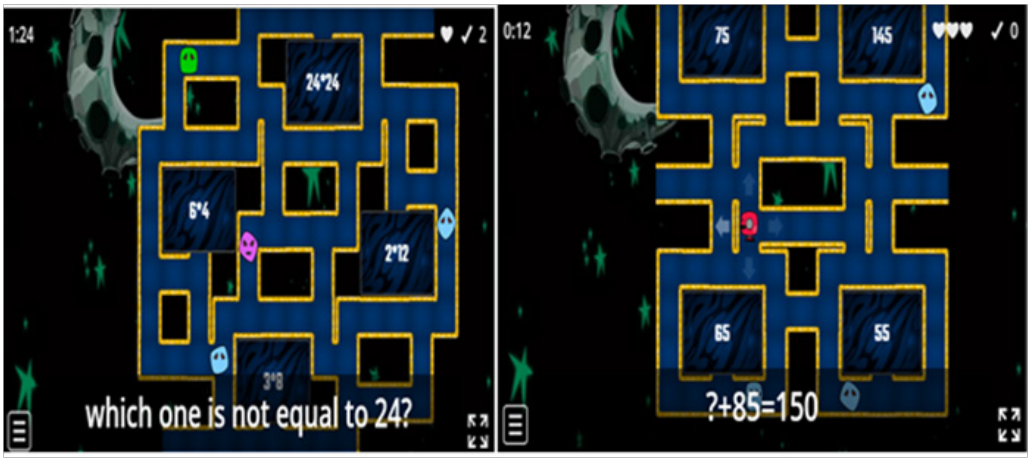
The user can log in to the application from the screen in Figure 16. For the user who wants to prepare the event himself, certain templates are included in the application that make it easier to prepare. Some of the templates included in the application are given in Figure 17.

***Figure 17**: Wordwall Event Templates (https://wordwall.net/tr)*



From the templates given in Figure 17, the user can create the event by choosing what he/she wants. It has the opportunity to use this activity in an interactive or printable way. Teachers can share these activities with other teachers or give them as homework and evaluate the results. (Wordwall, 2021). A screenshot of an interactive activity with mathematical content called "Math Game" is shown in Figure 18.

***Figure 18**: An Interactive Game Example "Math Game" Screenshot*



In the "Math Game" game in Figure 18, the process of finding and multiplying the sum (added + added = total) of primary school mathematics achievements is included. Thus, students are expected to make faster and more accurate decisions, taking into account

the time. The student who performs these operations will also have the acquisitions of mental operations. Along with this, although the student sees the plus (+) representing the addition sign, he will also be able to benefit from the subtraction by performing the reverse operation (?+85=150, ?= 150-85 =65). Thus, it will perform not only addition but also subtraction.

You can access the aforementioned "Math Game" game by using the QR code.

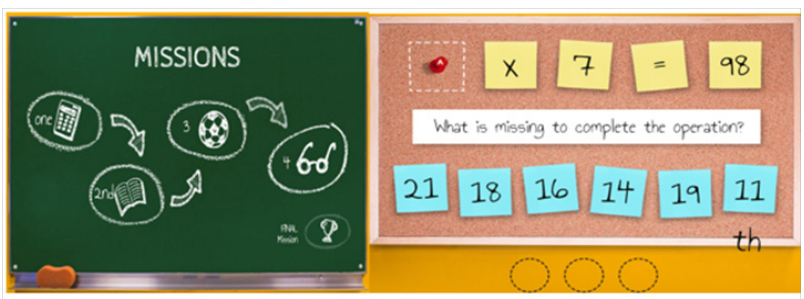
GENIALLY

The application provides training and easy use in some areas. Teachers or users can perform their own interactive activities or benefit from what is shared. From the templates offered in the tool, the user can use whatever he wants and associate it with the course he wants. With the Genially Web 2.0 tool, it is possible to create presentations, videos, graphics, interactive images, as well as create games (Genially, 2021). The activities can be shared by other teachers and students, if desired. The application can provide convenience in many lessons. There are ready-made templates designed to be used. However, the user must be logged in to create his own design. The relevant screenshot is given in Figure 19.

Figure 19: Registration Screenshot

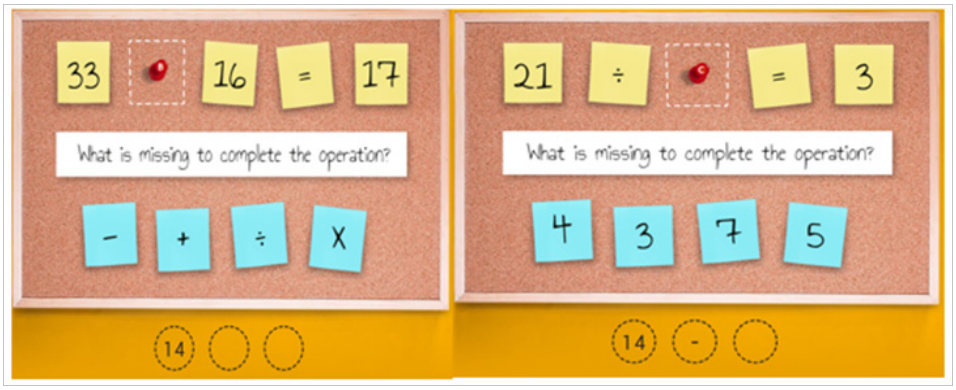
User registration can be created from the screen in Figure 19. After the user has created a record, they can start gamifying their work. A gamification template image is given in Figure 20, in which the tasks are ordered.

***Figure 20**: A Gamification Template With Quests Sequenced (https://genial.ly/education/)*



In the template in Figure 20, various questions are asked in four tasks. At the end of each task, passwords are formed with the numbers given to the player by the game as well as the result of the operation. After all the tasks are completed, the passwords are entered and the game is concluded successfully. These questions may vary within the field preferred by the users. In the task game in Figure 20, it is aimed for the students to fulfill their four operational gains. In the first question, the missing factor from the multiplication process whose product was given is requested (multiplier*multiplier=product). Opportunities are given to the student to try various ways while performing the procedure. One of these ways is for the student to realize that the product can be reached by dividing by the given factor (98 / 7 = 14). Another way is to consider the numbers that will occur in the ones place of the numbers multiplied by 7 from the answers presented to the student (7*21=…7, 7*18=…6, 7*16=…2, 7*14=…8, 7*19= …3, 7*11=…7). In this way, it is seen that the student not only takes the action, but also supports the ability to make faster decisions. Including the result of each question in a new question will enable the students to proceed carefully. The result of Figure 20 is used in Figure 21 and the next task is included.

***Figure 21**: Quest Game (https://genial.ly/education/)*



In the task in Figure 21, the result of the operation was given and it was asked to find out what this operation was (33?16= 17). After the subtraction symbol of the operation is determined, it is seen that this symbol is added in the next step. Likewise, while the missing number is requested in the division operation (21/?= 3), at the end of the screen, it is seen that there is a problem about a subtraction operation to create a password using the results of the previous operation.

The QR code on the side can be used to reach the mission game.

In line with the results of the studies reached, some suggestions regarding the use of games in mathematics teaching are given.

SUGGESTIONS

The following suggestions can be offered to educators working in this field:

1. It has been proven that games are beneficial in teaching mathematics, and it may be right to focus on game-based teaching in mathematics teaching and many lessons.

2. In order for game-based teaching to be applied intensively in the curriculum, teacher characteristics and school conditions must be appropriate.

3. In order to carry out game-based education, informative seminars can be organized for teachers and certain physical and digital games can be taught.

4. Game activities suitable for all primary school mathematics subjects can be created.

5. During game-based teaching, setting the environment and performing the game in accordance with a plan can make it easier for the game to reach its goal.

6. Paying attention to the time in the use of digital games, while students are trying to benefit from technology, computer addiction and so on. It can contribute to controlling the negative aspects of technology.

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Chapter 5

PROBLEM SOLVING BEHAVIORS, ATTACHMENT STYLES AND EMOTION REGULATION IN ROMANTIC RELATIONSHIPS

PROBLEM SOLVING BEHAVIORS, ATTACHMENT STYLES AND EMOTION REGULATION IN ROMANTIC RELATIONSHIPS

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INRODUCTION

Due to human nature, humans tend to relate to other people in various ways since their birth. One of these relationships is the romantic relationship. A romantic relationship is defined as a relationship in which individuals have positive feelings towards each other, have sensual and economic sharing, and cause sadness if it terminates (Collins, 2003). Romantic relationships, which individuals consider a pre-marital preparation period, also affect the emotional development of individuals. Individuals in a romantic relationship may encounter various problems in their daily lives. In these processes, the ability of the individual to cope with the problem in the relationship can affect the relationship dynamic. Romantic relationships usually begin during adolescence. In this period, the reflections of the intense feelings that people have for the opposite sex can be observed in their future relationships. The outcome of the ongoing relationship may also affect the mental health of the individual in the future. If the individual has had a good relationship in the past, this will pave the way for forming relationship patterns and dynamics in the coming years (Kaya, 2020). The nature of romantic relationships to be experienced in young adulthood may differ according to individuals' attachment styles that begin to form in childhood.

Bowlby coined the concept of attachment in 1958. This concept defines a type of relationship that the baby is born with, is felt for his mother, and is guided by physical symptoms, which also constitutes the starting point of social relations and plays a vital role in the individual's future relationships (Bowlby, 1958; cited in Yılmaz, 2007). For this reason, attachment styles formed in childhood and problem-solving behaviors in romantic relationships or the ability of individuals to reflect and regulate their emotions differ.

Emotions, which have an essential role in human life, arise from the interaction and relations of psychological, environmental, and biological factors. Emotions lead to behavioral, physiological, and cognitive reactions depending on the environment in which the person is in and other individuals in his life and help the person adapt to new situations. This function of emotions also defines one's ability to regulate emotion. *Emotion regulation skills* are defined as all behaviors related to how a person perceives and expresses the emotion they experience (Gross and Thompson, 2007). External regulators and external influences provide the emotion regulation process, such as the caregiver in the first years of life. Emotion regulation emerges from mutual interactions between individuals within a particular social culture (Friedlmeier and Trommsdorff, 1999). Temperament, neurophysiological and cognitive processes are also effective in the emotion regulation process. In addition, the attitude of the family members, the family environment, and the parents' personality traits are also seen as the components that affect the emotion regulation process.

According to Mikulincer and Shaver (2007), attachment theory draws the most impressive conceptual framework for understanding emotion regulation processes and skills. Bowlby's clinical observations and studies on emotions such as expression, disappointment, grief, anger, anxiety, and emotional intimacy brought the concept of emotion regulation to the literature (Bowlby, 1973; cited in Rugancı, 2008). Attachment relationship is an essential factor that affects the relationship of the individual with the other people with whom he/she interacts and enables the development of the emotion regulation capacity of the individual (Cassidy, 1994).

Goodall, Trejnowska, and Darling (2012) conducted a study that revealed a positive relationship between attachment styles and difficulties in emotion regulation. When the literature is examined, it is seen that studies are examining the relationship between attachment styles and emotion regulation (Rugancı, 2008; Karabacak and Demir, 2017). When the research results are examined, it is seen that the relationship between the ability of individuals to express and regulate their emotions according to their attachment style is emphasized.

Feeney and Noller (1990) stated a significant relationship between attachment styles and romantic relationship satisfaction and problem-solving behaviors in romantic relationships. In addition, according to individuals' attachment styles, problem-solving

behaviors change (Stackert & Bursik, 2003) are among the results reached on the subject.

THEORETICAL FRAMEWORK AND RELATED RESEARCH

This section gives conceptual explanations, definitions, and information about the previous research in the literature related to the study.

1.Problem Solving and Dimensions

The problem is the conflict situation that a person who wishes to achieve his goals is exposed to when faced with obstacles. When faced with obstacles, it becomes difficult to reach the goal as a typical result. According to Aslan (2002), the problem is that an event that confronts the person includes a difficulty or danger that must be overcome. According to Senemoğlu (2005), it is the effort to reach various goals and the means sought to achieve them.

Problem-solving can be defined as the individual's discovery of new solutions by going beyond their previous practices and life experiences to cope with negativity or put it in order (Türkoğlu, 2014). While problem-solving is a process that covers cognitive abilities, it also includes affective and social skills. In this respect, it can be claimed that it is a complex process to understand. According to Korkut (2002), problem-solving is closely related to many factors such as the individual's psychological adjustment, self-confidence in himself and his personality, decision-making methods, self-esteem in his academic and social life, and the effectiveness of his communication skills. Considering all these, it is understood that problem solving is an action that requires a certain level of skill.

It is possible for an individual who is confronted with a problem to show unusual reactions from time to time. When such a process is experienced, it is necessary to make the best decision to eliminate the problem (Kalkan, 2010). Instead, the person may engage in some nonconstructive behavior, such as ignoring the problem, waiting for the problem to disappear or be resolved unusually, hoping that problems will time out, waiting for others to solve the problem, delaying making decisions about the problem, or shifting the responsibility to another person (Korkut, 2002). For this reason, problem-solving brings with it some processes.

Since problem-solving is a common but complex process (Aslan, 2002), it would be more practical and accurate to analyze the situation by dividing it into stages. When the relevant literature is searched, it has been seen that there is no single correct method that can be used in solving all problems. Many researchers have categorized the processes and stages related to solving a problem in different ways. Senemoğlu (2005), on the other hand, listed the generally accepted steps in the problem-solving process as follows:

• Understanding the problem

• Making a plan to solve the problem

• Putting the plan into practice and

• Evaluate results

1.1.Problem Solving Behaviors and Romantic Relationship Beliefs

According to Doğan (2012), romantic relationships constitute an essential and indispensable aspect of people's lives and are usually established with the expectation of a long-term and happy union. However, it is not right to expect every relationship established to be satisfying. According to researches, satisfaction from a romantic relationship is related to many factors. One of these factors is relationship beliefs developed for romantic relationships. Studies by Saraç, Hamamcı, and Güçray (2015) have shown that beliefs about romantic relationships affect the satisfaction obtained from the relationship.

Gizir (2012) defines romantic relationship beliefs as perceptions and expectations that form certain ideals for a relationship. These beliefs can be divided into two categories, functional beliefs, and dysfunctional beliefs. *Dysfunctional relationship beliefs* are beliefs that are resistant to change, unrealistic, and exaggerated about themselves, their partner, and the nature of their relationship with their partner (Eidelson and Epstein, 1982). Some research results indicate that individuals who have problems in their romantic relationships have common dysfunctional beliefs about themselves, their partners, or their relationships (Gizir, 2012; Sarı and Owen, 2016).

Romans and DeBord (1995) determined the dysfunctional relationship beliefs that can be found in romantic relationships due to their study. These beliefs are as follows:

o We should be open and honest with each other with the person I am in a romantic relationship with.

o By reading each other's minds with the person I am in a romantic relationship with, we should know what is on our minds.

o We should do Everything together with the person I am in a romantic relationship with.

o We should meet each other's needs with the person I am in a romantic relationship with.

o We should be able to change each other with the person I am in a romantic relationship with.

o Everything should be perfect with the person I am in a romantic relationship with.

o It should be easy to maintain a good relationship with the person I am in a romantic relationship with.

It was stated by Kim, Sharp, and Carbone (2014) that dysfunctional relationship beliefs generally develop through observation of parent relationships or other couples or the media.

1.2.Research on Problem Solving

According to studies (Feeney and Noller, 1990) in which dysfunctional beliefs are handled together with relationship satisfaction and attachment styles, it has been concluded that there is a significant relationship between attachment styles and dysfunctional relationship beliefs and romantic relationship satisfaction.

As a result of Knee's (1998) research, it was understood that dysfunctional beliefs lead to communication problems and negative problem-solving behaviors in the romantic relationships of individuals.

In addition, among the scientific results on the subject, individuals exhibit less constructive problem-solving behaviors as their dysfunctional beliefs increase (Stackert and Bursik, 2003).

Hamamcı (2005), on the other hand, showed in his study with married couples that as individuals' dysfunctional relationship beliefs increase, their relationship satisfaction decreases.

A study was conducted by Kalkan (2010) with 300 students continuing their education at Ondokuz Mayıs University. The research investigated the relationship between physical abuse, emotional abuse, problem orientation, and social interest in adolescent romantic relationships. As a result of the research, it was seen that social interest was associated with physical abuse, emotional abuse, and problem orientation and was a significant predictor of these. While there was a negative relationship between emotional abuse and physical abuse and social interest, it was found that there was a positive relationship between problem orientation and social interest. According to the results obtained from the study, while the physical abuse levels of males were higher than the females, there was no significant difference in terms of emotional abuse according to the gender variable.

Yılmaz and Kalkan (2010) included individuals with romantic relationships in the premarital relationship development program. At the end of this program, it was observed that the relationship satisfaction of individuals increased.

Duran and Hamamcı (2010) gave premarital communication skills and conflict resolution training to university students with romantic relationships. At the end of the program, it

was observed that individuals' communication skills and problem-solving skills increased.

A study was conducted by Helvacı Küçük (2012) examining the relationship between problem-solving styles, social interest and love styles in romantic relationships of university students. The sample group of the study consisted of 330 university students. A positive relationship was found between attitudes towards love and emotional and physical abuse from problem-solving styles in the study. As a result of the research, no significant difference was found between social interest and problem-solving styles according to gender.

In their study, Dinçyürek, Akıntuğ, and Bedioğlu (2013) investigated the main conflict issues and conflict resolution strategies in university students' relationships with their friends and romantic friends, and whether there were any differences according to the relationship type. The sample group of the study consisted of 19 university students studying in the PDR department. The data were collected by the unstructured memoir method. According to the result obtained from this study; While the main problem in conflicts with friends was academic disagreement, jealousy was the main problem in conflicts with romantic friends. Another result is that positive conflict resolution strategies are frequently used in conflicts with romantic friends.

In a study conducted by Türkoğlu (2014), the relationship between university students' problem-solving skills in romantic relationships and their forgiving characteristics was investigated. Four hundred forty-four students studying in various departments of different universities formed the study group of the research. According to the results obtained, it was determined that there was a positive and significant relationship between the emotional abuse of university students and the variable of forgiving others. There was no significant relationship between the total scores of self-forgiveness, forgiving the situation, and forgiveness. It was determined that there was no significant difference between emotional abuse and physical abuse according to the gender variable.

Studies by Kaya (2020) revealed a positive and significant relationship between problem-solving behavior in romantic relationships and altruism and the life satisfaction of individuals. Problem-solving skills in romantic relationships show a significant difference depending on whether individuals have a romantic relationship or not. It was also concluded that altruism and life satisfaction predicted problem-solving skills in romantic relationships.

2.Attachment

Bowlby first introduced attachment as a concept in 1958 (Bowlby, 1958; cited in Soysal, Bodur, İşeri, and Şenol, 2005). After that, many researchers, the newborn baby is more congenital, guided by the physical symptoms; they studied attachment theory, which manifests itself with behaviors towards his mother or caregiver such as crying,

sucking, smiling, watching, calling, calling, waiting. This form of relationship constitutes the starting point of social relations and plays a vital role in the relationships that the individual will establish in the future.

Bowlby defines *attachment* as an automatic mechanism, a product of instinctive behavioral subsystems, and focuses on physical intimacy. The bonding process, which starts with the first contact that the baby makes with his mother after birth, affects every aspect of the individual's life (family life, education life, romantic life, business life, etc.) throughout his life. At this point, the role of the mother is to act as a bridge in the relationship between her baby and the outside world (Morsünbül & Çok, 2011). In other words, the mother directs the baby's attitudes, perceptions, and value judgments towards himself and the outside world to be positive or negative. This type of relationship between the baby and the mother in the first months is the first sign of the individual's future relationship patterns (Yılmaz, 2007).

2.1.Approaches to the Concept of Attachment:

2.1.1. Attachment Theory

According to Bowlby (1988), the person who cares for the baby and increases the sense of trust has a vital role in protecting the baby against stress and dangers. If the baby's caregiver or attachment object is sufficiently sensitive, compliant, and sensitive, the baby develops a secure attachment style (Bowlby, 1988; cited in Morsünbül, 2005). Individuals with a secure attachment style; exhibit a pattern of trusting their values, self-efficacy, and realistic and valid. In this way, they can develop positive relationships with the person who will be their partner in the future. These styles and models are based on the individual's competence and develop positive and good relationships with their peers. However, if individuals cannot develop sincere and close relationships during infancy, they experience a feeling of loneliness (Hamarta, 2004).

It should be noted that the concept of attachment and attachment behavior are two different concepts. Attachment behavior is the behavior of an individual to gain intimacy with another person or to maintain a close relationship with another person (Bowlby; 1979; cited in Erözkan, 2009). The first person children choose when they are in a difficult situation is often the mother, but if there is no mother, they can get intimate with another person.

While attachment behavior can be shown to people from a broader environment in such cases, attachment is shown to fewer and limited numbers of people. Attachment behavior can be observed at the earliest in early childhood and throughout the rest of the person's life. Attachment behavior can be observed, especially in emergencies where individuals require aid (Bowlby, 2014; Akman & Koçoglu, 2017).

2.1.2.Attachment Styles

Psychiatrist John Bowlby (1907-1990), with his studies, drew the attention of the scientific world to the concept of attachment, thus not only to what happens inside people but also to what happens between people (Bowlby, 1988; cited in Soysal, Bodur, İşeri, and Şenol, 2005). Bowlby's scientific work with 44 thieves is notable for reinforcing the claim that deprivation of a mother in early childhood can cause severe problems with a social and emotional adjustment later in life. In the most concise terms, Bowlby's views are that attachment is first based on the mother after birth (Gürsoy, 2018). One of the essential requirements for survival is the attachment of the child to the mother.

There may be some conditions that are not suitable for establishing a secure bond between mother and baby. These conditions can be considered premature birth, putting the baby in the incubator, medication, narcosis, early separation of the baby from the mother, little or no physical contact between the mother and the baby, or the mother's refusal to breastfeed the baby. It is stated that the mother's mental health, which is the basis of attachment, plays a significant role in the development of attachment from the moment a woman learns about her pregnancy, and this situation continues for at least one year after birth (Soysal, Bodur, İşeri, and Şenol, 2005).

2.1.3. Bartholomew and Horowitz's Quadruple Attachment Theory

The four adult attachment styles (secure, obsessive, indifferent and fearful attachment) defined by Kim Bartholomew and Leonard M. Horowitz (1991; as cited in Gürsoy, 2018) are explained below:

Secure Attachment

Secure attachment is based on the positive acceptance of oneself and others. In the secure attachment style, the individual is sure that they can reach their mother or father when they experience a negative situation, which will help them. With the support of parents, the individual act more courageously in making discoveries. The fact that the mother or another person who takes care of the child is sensitive to the child's signs and approaches him with love when he needs it supports forming a secure attachment style (Bowlby, 2014). Secure attachment forms the basis of a healthy personality structure. It can be said that securely attached people are advantageous in terms of mental health. Self-thoughts are positive. Relationships with other people are healthy, and there is a sense of trust underlying this. In addition to their consistent and long-term relationships, they can make their own decisions (Gürsoy, 2018).

Obsessive Attachment

Obsessive attachment is based on the assumption that the self is negative and others

are positive (Rugancı, 2008). These individuals perceive their personality traits as worthless, and these perceptions cover their whole lives. They have unhealthy thoughts about themselves, lack self-confidence due to feelings of worthlessness, and these traits distance them from other people. Social relationships are easily broken or not established at all. Trust problems cause them to use commitment too much in social relationships (Gürsoy, 2018). Individuals with this attachment style consider themselves worthless and others as valuable; this may cause them to grow up as individuals who cannot make their own decisions and are very open to directing.

Indifferent Attachment

Indifferent attachment is based on the assumption that the self is positive and others are negative. Their most typical characteristic is that they do not want to be attached to the people they socialize with. These individuals prioritize their characteristics, care about making their own decisions freely, and social norms are not considered necessary (Gürsoy, 2018).

Fearful Attachment

Fearful attachment is based on the assumption that the self and others are negative. A lack of confidence marks it. This situation causes the person to distance himself from his social relations and thus experience social relations problems. In addition, this attachment style causes a lack of trust, and relationships are built on insincerity (Gürsoy, 2018).

2.1.4. Ainsworth's Triple Attachment Model

Bowlby, the founder of attachment theory, examined the relationship between mother and child together with Mary Ainsworth, who played a role in developing the theory (Ainsworth and Bowlby, 1991; cited in Alantar and Maner, 2008). Based on the idea that individual differences exist in attachment relationships and that each person develops different internal models, Ainsworth (1989) focused on revealing these differences in his studies. Ainsworth, who conducted experimental research on Bowlby's attachment theory, also contributed significantly to the development of this theory. Ainsworth's most remarkable contributions to Bowlby's theory are the concept of "safe base" and his comments on individual differences in individuals' attachment relationships (Ainsworth, Blehar, and Waters, 1978; cited in Onur, 2006).

Based on Bowlby's theory, Ainsworth (1989) examined attachment relationship models between mother and child through an experimental test called "foreign status". With this test, it was aimed to examine how babies aged between 12 and 18 months prefer attachment figures as a safe base in an environment where they have not been before, how they behave when strangers try to get close to them, and how they cope with the fear and anxiety they feel in the absence of attachment figures. (Ainsworth, 1989; cited

in Morsünbül and Çok, 2011).

The stages of this test are as follows: first, the baby is left in an unfamiliar environment with their mother for a while. Then the mother leaves the room, and the baby stays alone in the room with the stranger for a while. Subsequently, the mother returns to the room, and the baby's reactions to their mother are observed with the mother returns. As a result of this study, Ainsworth concluded that children show three types of attachment patterns: secure attachment, avoidant attachment, and anxious/ambivalent attachment, thus forming the triple attachment model (Morsünbül and Çok, 2011).

The secure attachment style can develop when the caregiver meets the baby's basic needs adequately and promptly (Gürsoy, 2018). Babies who develop a secure attachment style have both intimacy and warmth in their relationships with their mothers. In addition, when a distressing situation arises, the baby may dare to explore his environment with the feeling of confidence that he will be supported (Bowlby, 1988; cited in Sevinç and Kılınç, 2016). These babies typically show irritable reactions when separated from their mothers, but these reactions are minimal, and they do not panic. Without resisting intimacy, they quickly communicate and calm down when they meet their mother again and return to explore their surroundings. (Sümer and Güngör, 1999).

Anxious-ambivalent attachment style is an attachment style that can develop in cases where the caregiver does not show sufficient sensitivity to the basic needs of the baby and becomes desensitized (Kesebir, Kavzoğlu, and Üstündağ, 2011). When babies who have internalized the anxious-ambivalent attachment style are examined, it has been revealed that when they cry, they are ignored by the caregivers, they do not receive attention, and their activities such as games are interrupted and prevented (Ainsworth, 1989; cited in Rugancı, 2008). Babies who internalize this attachment style cannot develop trust towards their mothers (Kesebir, Kavzoğlu, and Üstündağ, 2011). They are suspicious about the availability of their caregivers and behave nervously towards them. They are hesitant to explore their environment because they are not sure they will be supported when they experience a negative situation. They hold tight to their mothers and resist letting go.

It has been observed that the avoidant attachment style develops in babies who grow up with caregivers who are mainly cared for with a distant attitude, who object to their babies' need for intimacy in general and try to avoid bodily contact. Even if these babies are separated from their mothers for a short time, they perceive this situation as being abandoned, and they protest the situation and display hostile attitudes (Ainsworth, 1989; cited in Onur, 2006). In addition to doubting that they will be supported, these babies are careful not to act in attention, thinking they will be scolded. In addition, these babies, who do not seem to be affected much when separated from their mothers, seem not to expect to meet their mothers again (Sümer and Güngör, 1999). When avoidant-attached infants are separated from their mothers; It has been observed that they experience a strong sense of uneasiness and anxiety and object to contact with people they do not know, and when

they are reunited with their mothers, they do not calm down quickly; therefore they do not tend to explore the environment (Sümer and Güngör, 1999). Although these babies do not want to have a relationship, they tend to protest this situation when there is no relationship in conflict with these desires; this causes them to display inconsistent behaviors towards their caregivers (Bell and Ainsworth, 1972; cited in Kesebir, Kavzoğlu and Üstündağ, 2011).

2.1.5. Hazan and Shaver's Triple Attachment Model

Influenced by Ainsworth's 1989 research on infants' attachment patterns, Hazan and Shaver argued that attachment styles, the foundations of which were laid in infancy, could continue in adulthood and that patterns reflecting similar dynamics could emerge on romantic relationships in adulthood (Hazan and Shaver, 1987). The thought that the negativity experienced in one of the interlocking operational principles will affect the other in a chained way has strengthened this defense and led researchers to examine this issue (Hazan and Shaver, 1994).

The results of Hazan and Shaver's (1987) research on adults' romantic relationships between the ages of 14-82 revealed dynamics that overlap with the styles in Ainsworth's triple attachment model. In the study, sub-dimensions such as jealousy, sexual attraction, trust, and longing were included, and these cases were evaluated in terms of secure, anxious, and avoidant-ambivalent attachment styles. According to the research results, adults who internalized the secure attachment style in early childhood stated that the romantic relationships they experienced were satisfactory relationships that made them feel happy and secure in a friendly way. It has also been noted that these people do not have a problem getting close to others (Hazan and Shaver, 1994). Adults who internalize the anxious-ambivalent attachment style; stated that although they wanted to get close to other people, they were worried about being rejected and abandoned. They also added that they do not believe in their partners easily and cannot trust them quickly, and they defined their relationship as "jealousy, emotional tides and passion" (Hazan and Shaver, 1987).

After defining the attachment styles; The concept of “disorganized attachment” was developed with the thought that it would be insufficient to describe the attachment pattern that occurs in abnormally bad conditions as “insecure attachment” (Kesebir, Kavzoğlu, and Üstündağ, 2011). Considering the results of the studies conducted with pre-school children on attachment, children with secure attachment style have higher social skills and more positive affect than their peers; in addition, they can adapt and cooperate with adults. It has been observed that insecurely attached children are prone to social isolation, disturbed, angry, restless, aggressive towards their peers, maladaptive, and prone to depression, and they cannot fulfill their responsibilities. It was determined that those who showed tense resistance resorted to physical violence, displayed disruptive behaviors, automatically reacted to the rules, and had sudden outbursts of anger. On the other hand, it

has been determined that anxious-avoidant children try to control the people around them and cannot express their anger (Soysal, Bodur, İşeri, and Şenol, 2005).

In adolescence, the attachment of the child to the parent changes. Attachment of adolescents can be categorized into three groups: On the one hand, some distance themselves by separating themselves from their parents; on the other hand, some are intensely attached to their parents, and those who are unwilling or unsuccessful to attach to others. Between these two extremes, some adolescents continue to be attached to their parents and care about connecting to new people (Bowlby, 1969; cited in Sarıbal, 2017).

2.2. Attachment in Adulthood

The bonds established during infancy and childhood are mostly those established with parents or the people who care for the baby. These bonds established with puberty and adulthood generally tend towards the opposite sex (Bowlby, 2013). Along with the hormonal changes experienced during adolescence, individuals seek a close relationship with their opposite-sex partner, including their reproductive and care systems (Ainsworth, 1989; cited in Karabacak and Demir, 2017).

It is seen that the parent-child relationship in childhood affects adult attachment, but according to Hazan and Shaver (1987), adult attachment is different and more sophisticated than childhood. One of the crucial differences is that the romantic relationship is two-way and reciprocal between individuals. While individuals may be anxious and seek security from time to time in a relationship, they may also be in a position to provide security and care when necessary. During infancy, babies expect security from the person they are attached to, but they cannot provide security to anyone, whereas in adults' relationships, the security relationship is mutually established. Each couple can be both a trustee and a security receiver (Hazan and Shaver, 1994).

Another difference is that babies need physical contact to feel safe. However, adults can experience a sense of security and comfort even without physical contact. Adults experience this sense of security and comfort with the knowledge that they can contact their partners when needed. Again, adults have a higher chance to make physical contact than babies (Hazan and Shaver, 1994). Another difference between infants and adults is that the romantic relationship includes sexual attraction in adulthood (Hazan and Shaver, 1987). When infancy and adult attachment are compared, it is seen that the individual's needs and expectations, which change with his development, are also reflected in attachment relationships.

2.2.1. Adult Attachment Styles and Romantic Relationships

According to Hazan and Shaver (1994), although it is known that the search for intimacy in adults is different from that of infants, the initial stage of the relationship with the

other party shows similarities. In adulthood, the person with whom a romantic and close relationship is established takes on the role of an attachment figure. Adults in a romantic relationship, like infants seeking intimacy, focus on the responses of the attachment figure. While the positive reactions of the person with whom a romantic relationship is established create a feeling of happiness and confidence in the individuals, their adverse reactions cause distress and anxiety (Hazan and Shaver, 1994).

According to Ainsworth (1991), a secure attachment relationship increases the individual's competence and functionality outside the relationship. Because in a secure attachment relationship, the individual reaches a sense of trust and comfort and sees his partner, the person with whom he has a relationship, as a secure base. In this way, the individual can take the risk of getting away from their partner and engage in other activities.

Studies have shown that adults with a secure attachment style have feelings of love, commitment, and trust in their romantic relationships. These individuals support the person they are in a romantic relationship by accepting them as they are. Similarly, individuals with a secure attachment style are more sincere in their conversations with their partners than individuals with other attachment styles (Hazan and Shaver, 1987). The fact that individuals with a dismissive attachment style find it difficult to ask for support and help from the person they are in a romantic relationship with when they need support has been revealed by studies (Burger, 2006). On the other hand, studies show that obsessively attached individuals want to establish a controlling, sticky and intense closeness towards their partners in romantic relationships (Mikulincer and Shaver, 2019).

2.3. Romantic Relationship and Attachment Theory

According to Bartholomew and Horowitz (1991), close relationships are established in adulthood, and the patterns of these relationships are affected by the attachment relationships established with the mother or caregiver during infancy. On the other hand, Hazan and Shaver (1987) stated that while explaining the romantic relationship and emotional intimacy, this situation corresponds to an attachment process. This attachment process manifests differently in individuals with different attachment histories. In other words, the person who has developed some attachment patterns with his mother or caregiver, like every human being, maintains these patterns while establishing a romantic relationship with another person in the later stages of his life.

The person may have different attachment styles in the attachment process according to the patterns inherited from infancy. The secure attachment style is the most consistent of all attachment styles and works best in the relationship. Securely attached individuals can easily communicate with their partners and thus establish intimacy. They do not have anxiety about attachment to their partner, and they do not fear abandonment. However, individuals with an anxious-ambivalent attachment style maintain their protesting attitudes towards their partners in their romantic relationships when they are away from

their mothers during childhood (Sevinç and Kılınç, 2016). Individuals with an anxious-ambivalent attachment style cannot establish closeness with their partners as much as they want and cannot be sure of their partner's feelings and love for them. Because of this, they are constantly worried and may think that their partner does not want them. Individuals with an avoidant attachment style, on the other hand, cannot quickly establish closeness with other people and have difficulty in attaching to someone. They may get angry because their partners do not act close to them, and they may show the behavior of breaking off from the relationship frequently. They also exhibit the behavior of not maintaining the relationship. These individuals have difficulty attaching to another person, do not like closeness, and stay away from close relationships (Hazan and Shaver, 1987).

People continue their attachment styles and behaviors that they have developed since the first years in their choice of spouse and marriage. The most basic and permanent bond that a person establishes is usually the marriage bond (Duran and Hamamcı, 2010). The marriage bond is the most enduring bond formed and maintained after parents and other close family members. Couples of two individuals with different attachment styles maintain the behaviors required by their attachment styles in their married life and even continue developing these behaviors. They reinforce the behaviors they adopt during the marriage process or shape them according to the state of their relationship (Hamamcı, 2005). Individuals interact with their partners according to their secure, anxious-ambivalent, and avoidant attachment styles.

2.4. Researches on Attachment

In a study conducted with 313 university students in Ankara, Sümer and Güngör (1999) observed that individuals with secure attachment experience higher levels of self-esteem, satisfaction with their friends, and lower levels of anxiety compared to individuals with insecure attachment. It has been seen in studies that individuals with fearful and preoccupied attachment styles show the opposite pattern of individuals with secure attachment, and those with negative self-models have higher averages than individuals with positive self-models in terms of their desire to please others and disapproval anxiety.

Studies examining children's attachment relationships with their parents have stated that children who have a secure attachment relationship are also successful in their future relationships. Repeatedly, the results of the research showed that these individuals felt more socially competent. It is known that these individuals, who establish a secure attachment relationship with their family members, are also physically healthier and have a high level of self-esteem (Sümer and Güngör, 1999).

Mikulincer and Shaver (2012) examined the relationship between empathy and attachment styles and concluded that as the scores on the anxious and avoidant attachment styles increased, the scores on the empathy dimension decreased.

Erözkan (2004), on the other hand, researched with 380 university students to determine the variables that affect the communication skills of university students. As a result of the study, it was found that attachment styles, interpersonal relationship styles, and self-esteem are essential predictors of communication skills. It has been observed that young people with a secure attachment style are more adaptable and establish a more satisfying relationship with the individuals around them. In contrast, young people with an insecure attachment style have more challenging relationships with their dependents, parents, or other family members (Hamarta, 2004).

Yılmaz (2007) compared genders regarding attachment styles and interpersonal communication skills and found that female students were more fearfully attached than male students; revealed that male students were more securely attached than female students.

Some research results show a positive relationship between attachment styles and emotional intelligence (Deniz, Hamarta, and Arı, 2005). Individuals with a secure attachment style become more aware of their emotions and are more confident in dealing with problems. At the same time, it has been seen as a result of research that they show more adaptive behavior and have higher motivation to cope with stress (Deniz, Hamarta, and Arı, 2005).

A study examining emotional reactions according to attachment styles was conducted with university students by Gentzler, Kerns, and Keener (2010). According to the research results, it has been observed that individuals with an anxious attachment style focus more on negative experiences. On the other hand, Securely attached individuals approached negative experiences with less anxiety and tended to focus on positive events and experiences rather than negative ones.

Akbağ and İmamoğlu (2010) found that individuals with secure attachment experience fewer feelings of loneliness than individuals with other attachment styles and stated that loneliness is positively related to insecure attachment and negatively related to secure attachment.

According to Kesebir, Kavzoğlu, and Üstündağ (2011), the attachment styles of young people determine their success in adapting to social relationships and difficulties of life. Cabral, Matos, Beyers, and Soenens (2012) examined the relationship between attachment styles, emotion regulation skills, and coping strategies in a study conducted with undergraduate students. According to the research results, it has been observed that individuals with secure attachment and close emotional bonds use more constructive emotion regulation skills and coping strategies than insecurely attached individuals.

Pepping, Davis, and Donovan (2013) conducted a study with university students. This study examined the mediating role of emotion regulation in the relationship between attachment and awareness. According to the results obtained from the research, it was

determined that the difficulties experienced by individuals in the process of emotion regulation mediated the relationship between insecure attachment and awareness. It has been observed that individuals with anxious attachment experience more emotion regulation difficulties.

A study was conducted by Ergün (2019) to examine the predictive power of university students' attachment dimensions with their parents on their romantic relationships. According to the results obtained from the research, it was determined that attachment anxiety in a romantic relationship was positively related to the divorce status of the parents. University students whose parents are divorced have higher romantic relationship attachment anxiety scores and higher avoidance scores.

3.Emotion Regulation

Although people in daily life frequently use emotion, it cannot be easily defined. Goleman's (2007) definition of emotion states that emotion is a feeling and specific thoughts, biological and psychological states, and a set of movement tendencies. According to Morgan (2009), emotions have a motivating effect on individuals. Gross's (2002) view is that emotions reveal regulated behavioral, physiological, and experiential response tendencies that affect how individuals respond to perceived challenges or opportunities. According to Gross and Thompson (2007), a person can intensify, reduce or maintain the emotion he/she experiences depending on his/her goals. Emotion regulation processes can be conscious or unconscious, automatic or controlled. Its effects can be seen at one or more points in the emotion generation process.

In regulating emotions, the main goal is not to eliminate negative emotions but to accept and control these negative emotions in the individual's state (Tull and Roemer, 2007). Briefly, emotion regulation skills consist of attempts by individuals to manage their emotional states.

Thompson (2008) also mentioned various features of the emotion regulation process. The first of these is that children gain the ability to cope with their emotions as they grow up, and the other is that they provide a different perspective on the development of individual differences (Karabacak and Demir, 2017). Thus, we can interpret that emotion regulation skill shows how the individual communicates with his social environment.

There are some emotion-based developmental tasks that a human infant must perform in the first seven years of its life. These tasks are:

• Dealing with disappointments,

• To attract and entertain other people,

• Realizing the danger, coping with feelings such as anxiety and fear,

• Being able to tolerate being alone,

• Motivation and interest in learning, and

• It is the ability to establish friendship relations (Duman, Yılmaz, Umunç, and İmre, 2019). It is known that all these tasks that should be performed in childhood can be realized thanks to emotion regulation skills (Cole, Michel, and Teti, 1994; cited in Thompson 2008).

3.1.Emotion Regulation Process and Its Basic Features

Although there is no assumption about whether regulating emotions is good or bad, it is stated that both positive and negative emotions can be regulated in studies on emotion regulation (Sarıbal, 2017). Individuals in the emotion regulation process can maintain their positive or negative emotions. However, they can reduce or increase these feelings they experience. Therefore, emotion regulation mainly involves changes in individuals' emotional responses. These changes can manifest themselves according to the type of emotions experienced by individuals (Gross, 1999, cited in Duy and Yıldız, 2014).

Emotions can include not only positive but also adverse effects. According to Gross and Thompson (2007), reducing, increasing, or maintaining a particular emotion is individuals' actions to regulate their emotions. The primary and most basic purpose of emotion regulation is to adequately change the emotional reaction experienced by individuals (Gross, 2002). The emotion regulation mechanism enables the person to extinguish, strengthen or maintain the emotion under the influence of his/her goals (Gross, 2002; Gross and Thompson, 2007).

There are some steps that an individual should follow in order for the emotion regulation process to take place healthily:

i. Recognition and understanding of emotions by the individual

ii. Acceptance of emotions by the individual

iii. Control of impulsive behaviors by the individual and act towards desired goals (Gratz and Roemer, 2004).

According to Thompson (2008), the emotion regulation process consists of internal and external processes. While internal processes mean the individual's ability to regulate their own emotions, external processes mean someone else's regulation of their emotions (Duy and Yıldız, 2014). An example of an external process is the caregiver's soothing the baby's

restlessness. When emotion regulation literature is examined in terms of adults, it is seen that emotion regulation is an internal process for adults (Gross and Thompson, 2007), while it is emphasized that it is an external process in the development literature (Cole, Martin, and Dennis, 2004; cited in Southam Gerow, 2013). In addition, it has been stated that emotion regulation skills and strategies are acquired in the early stages of life and emerge during developmental processes (Duy and Yıldız, 2014). From this point of view, emotion regulation emerges from the relationship between the child and the caregiver and develops in the process (Southam Gerow, 2013).

3.2.Emotion Regulation Strategies and Attachment

According to Meredith, Strong, and Feeney (2007), the concept of emotion regulation and the emotion regulation process are accepted as a basic structure in attachment theory. According to Cassidy (1994), regulating the baby's disturbing emotional states is a function of the attachment system. Attachment theory is practical on the structure of emotion regulation and has an essential role in developing and maintaining close relationships. The ability of individuals to develop skills for the emotion regulation process occurs within their social environment (Thompson, 2008). As a matter of fact, with the infancy period, the first social environment of children is formed. This social environment is the family for the baby.

According to Cole, Michel, and Teti (1994; cited in Thompson, 2008), individuals learn to express and regulate different emotions by experiencing different emotions, thanks to the relationships they live and develop during infancy and childhood and the social environments enter. Indeed, a person carries these emotion regulation skills gained in childhood to other periods of his life. It is crucial that the caregiver answers the baby's needs and that this person is accessible to maintain the closeness established by the baby (Sarıbal, 2017). In this way, babies also learn to express their emotions. Depending on whether emotions can be expressed clearly in the family, which is the first social environment, emotion regulation skills can be developed and successfully regulated, or difficulties can be experienced. According to Çalışır (2009), feeling that the attachment figure is accessible in adulthood turns into internal and external resources used to cope with adverse situations or emotions experienced by the person.

According to Bowlby (1988), the infant sees the caregiver as a secure base if the attachment figure, that is, the caregiver, meets the infant's needs and responds positively to the attempt to establish intimacy. In this way, the feeling of secure attachment is supported (Bowlby, 1988; cited in Saymaz, 2003). With this sense of secure attachment, the individual's perception of their worth and importance develops, and consequently, their emotion regulation skills begin to develop (Mikulincer, Shaver, and Pereg, 2003). For example, when the individual encounters an event that creates stress or fear, the search for intimacy emerges first. If the attachment figure is accessible to the individual, the individual uses security-based strategies (Çalışır, 2009). The purpose of using these strategies is to make

personal adjustments, reduce distress, and increase access to supportive relationships.

People with a secure attachment style do not avoid facing situations that involve threats and fear. Securely attached individuals have firmer beliefs that they can regulate negative emotions than insecurely attached individuals (Soysal, Bodur, İşeri, and Şenol, 2005). At the same time, their belief and expectation that they can solve their problems or be supported without being criticized, belittled, and rejected by others are also higher than those with insecure attachments. For this reason, they feel comfortable and act about opening up, getting cooperation from other people, or being open to new ideas (Helvacı Küçük, 2012).

Emotion regulation needs are lifelong, just like the attachment. However, the adequacy of emotion regulation differs in each individual according to the attachment style (Karabacak and Demir, 2017). When evaluated in terms of attachment styles, individuals with secure attachment styles are more successful in adapting to the environment and regulating their emotions. However, individuals with insecure attachment styles have lower emotional regulation skills and social adaptation. A person with a secure attachment style has a more optimistic stance towards life. When encountering a dangerous situation or difficulty, they tend to use more constructive emotion regulation strategies and skills than insecurely attached individuals (Kaya, 2020).

3.3. Researches on Emotion Regulation

Gentzler and Kerns (2006) also conducted a study with university students. This study obtained a vital result that adults with insecure attachment styles tend to underestimate the intensity of positive events and emotions.

Goodall, Trejnowska, and Darling (2012) conducted a study with young adults. According to the results of this study, it was revealed that there is a positive relationship between insecure attachment styles and difficulties in emotion regulation.

Rugancı (2008), on the other hand, in his study to support these findings, examined the relationship between emotion regulation skills and attachment style in university students. As a result of the findings obtained from the research, it was determined that students with a secure attachment style were able to express and regulate their emotions better than students with insecure attachment.

As a result of the research conducted by Arndt and Fujiwara (2014), it was stated that the reorganization skills, which are the sub-dimensions of the emotion regulation process, beneficially affect mental health and accompanying events. It has been explained that the suppression dimension, which is another sub-dimension, affects it inconsistently.

Marganska, Gallagher, and Miranda (2013) conducted a study with participants between

18 and 48. This study examined the role of emotion regulation in the relationship between adults' attachment styles, generalized anxiety disorder, and depression. According to the results obtained from the research, it has been determined that insecurely attached individuals have more difficulties in emotion regulation than securely attached individuals.

As a result of the study conducted by Özbay, Palancı, Kandemir, and Çakır (2012), it was found that emotion regulation skill predicted subjective well-being.

Gülgez and Gündüz (2015), on the other hand, developed a dialectical behavior therapy-based program to reduce emotion regulation difficulties. It was concluded that this program was effective in reducing the emotion regulation difficulties of university students.

Topkaya and Meydan (2013) conducted a study on the problems experienced by university students and their intention to seek psychological help. As a result of the study, it was determined that university students mainly experienced emotional problems. In addition, it has been determined that they have problems such as romantic problems, family problems, smoking/substance use problems, emotional problems, and personality problems.

Conclusion

Attachment styles formed during childhood and problem-solving behaviors in romantic relationships and individuals' ability to reflect and regulate their emotions differ. In this compilation study, the basic features of these concepts and their relations did discuss in terms of their theoretical foundations.

According to Karabacak and Demir (2017), emotion regulation competence differs in each individual according to the attachment style. When evaluated in terms of attachment styles, individuals with a secure attachment style are more successful in adapting to the environment and regulating their emotions. However, individuals with insecure attachment styles have feebler emotional regulation skills and social adaptation.

In the literature, it has been emphasized that individuals are showing secure attachment style resort to emotional abuse less in problem-solving, while individuals showing dismissive or preoccupied attachment style use emotional and physical abuse methods (Çalışır, 2009; Ergün, 2019). In this context, experts can support individuals to gain healthier problem-solving skills without resorting to emotional or physical abuse by conducting seminars to improve their problem-solving skills, individual or group psychological counseling.

As a result of the study conducted by Ergün (2019), it has been shown that individuals who have a secure attachment relationship with their parents are also more successful in their romantic relationships in the future. According to the results of this study, it can be interpreted that individuals who have a secure attachment relationship with their family members feel more competent socially and can positively use their emotion regulation skills.

When the results of the study conducted by Kesebir, Kavzoğlu, and Üstündağ (2011) are examined, it is seen that young people with a secure attachment style are more adaptable, and therefore they can establish a more satisfying relationship with their friends and parents. On the other hand, young people with insecure attachment styles were more dependent and had more challenging relationships with their parents or other family members.

The results of the study indicate that there is a positive relationship between attachment styles and emotional intelligence. According to the results of the research conducted by Deniz, Hamarta, and Arı (2005), individuals with a secure attachment style become more aware of their emotions and are more confident in dealing with problems. At the same time, the study showed that they showed more adaptive behavior and had higher motivation in situations where they had to cope with stress.

When the study results by Cabral, Matos, Beyers, and Soenens (2012) were examined, it

was seen that individuals with secure attachment styles and close emotional bonds used more constructive emotion regulation skills and coping strategies than individuals with insecure attachment styles.

The study results show that the difficulties experienced by individuals in the process of emotion regulation mediate the relationship between insecure attachment and awareness. It indicates that individuals with an anxious attachment style have more emotional regulation difficulties (Pepping, Davis, and Donovan, 2013). According to this result, it can be interpreted that there is a positive relationship between insecure attachment styles and difficulties in emotion regulation.

As a result, the study concludes the adverse effects of insecure attachment on emotion regulation in the individual's life and problem-solving behaviors in romantic relationships. Based on this result, information and awareness studies can be carried out for parents about child-rearing attitudes and approaches that will ensure the development of secure attachment in children; considering this effect, psychological support services can be provided for individuals who have problems in their relationships.

In addition, increasing researchers' research and publication activities on the relationship between attachment styles, emotion regulation skills, and problem-solving behaviors will contribute to obtaining more reliable results.

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Chapter 6

PROBLEMATIC INTERNET USE IN MARRIED INDIVIDUALS

PROBLEMATIC INTERNET USE IN MARRIED INDIVIDUALS

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INTRODUCTION

The internet, which enters our lives at a dizzying pace and is constantly evolving and updating, is an effective mass media that allows individuals to access all kinds of information, have fun, and communicate simultaneously with their loved ones without time and space limitations.

The internet; can be considered a time-saving opportunity when used rationally for research, banking, shopping, education, health, appointment making, etc. The other feature of the internet is eliminating distances and offers easy, inexpensive, and visual communication.

In addition, within the scope of pleasure and entertainment, gaming, chatting and spending time, and illegal gambling and pornography have also become common at present. However, it is observed that pleasure and entertainment lead to problematic use of the internet over time.

There are also studies (Rajani and Chandio, 2004) that examine the effects of problematic internet use on the individual and social levels. It is thought that there are some adverse effects of problematic internet use of married individuals in the family environment that constitutes the building block of society.

People want to get married for many bio-psycho-social reasons, such as sexual need, having children, economic factors, or expectations of society. In addition, meeting psychological needs such as love, intimacy, emotional sharing, and support can also be counted as reasons for marriage as it contributes to the well-being of individuals. The realization of all these functions requires that the relationships of spouses be solid and healthy. For a healthy marital relationship, marital harmony is a crucial strainer. In ensuring marital

harmony, the personality traits of individuals, the way they live the relationship, and their expectations have an important role.

One of the problems that problematic internet use creates in the family is that it causes neglect by preventing the basic needs of family members from being addressed because spouses spend too much time on the internet. Decreased sharing leads to the weakening of family ties.

It has been shown that individuals who use the Internet intensively are less engaged with their family and friends circles and spend less time with them (Kraut et al., 1998).

The stress situation that occurs with the incompatibility in marriage is one of the most important causes of marriage burnout. Marriage burnout is a state of physical, emotional and mental exhaustion caused by the chronic difference between expectations and reality, which is caused by the intensification of emotional demands in a long-term relationship" (Pines, 1996). Inevitably, this state of burnout in the married life of spouses will negatively affect other areas of their lives. According to Çapri (2008), changes in family, profession, and marriage affect one's daily life, causing many problems (personal, social, professional, and familial) and facing exhaustion.

The problematic use of the internet may be related to some unmet psychological needs of married individuals and may be directed towards meeting these needs through the internet. In this process, the internet can become problematic, and there may be negative consequences for this problematic use, and it can be thought that this will cause serious harm to domestic communication and interaction.

Adults who cannot meet their domestic social support and psychological needs and have poor family relationships can also spend a lot of time in a virtual environment where they can feel much better; this situation is negatively reflected in the fields of work, family and social life and it is thought that this negative reflection is pushing adults to use the internet even more problematicly.

One of the crucial concepts associated with internet addiction is the "need for socialization" of the individual (Grohol, 1999; Flagtutan, 2005; Akman, 2016). This need can be thought of as the desire to meet socialization, which cannot be achieved or gained in real life in the internet environment. The individuals try to socialize through e-mails, chat rooms, discussion forums, and online games (Grohol, 1999). Someone who wants to interact socially through the internet does not like face-to-face interaction after a specific time (Caplan, 2002). The individual's orientation to the internet to socialize or find social support triggers the risk of problematic use of the internet so that the individual can move away from society (Thatcher and Goolam, 2005).

It is suggested that many people meet their most critical social needs consisting of "close

relationship", "support," and "approval" online (Amichai-Hamburger, 2007). Studies (Keser-Özcan and Buzlu, 2007) show that the internet is moving away from social life and becoming lonely by addressing the needs that people need to address in social life through the internet. Suler (2004) suggests that people who fail to meet their personal needs such as love, intimacy, and belonging in the real world can turn to the internet, which provides a safe and comfortable environment to satisfy these needs, resulting in the internet addiction.

When the literature is examined, it is seen that there is a need for research that examines the family structure, problematic internet use that affects the quality of inter-member relations in terms of variables such as marital adjustment, spousal burnout levels, and basic psychological needs of married individuals.

Problematic Internet Use

In general, Problematic Internet Use (PIK) can be defined as "the use of the Internet in an individual's life in a way that creates psychological, social, school and/or work difficulties" (Beard & Wolf, 2001). Bayraktutan (2005) emphasized that the amount of time spent on the internet alone is not sufficient in the determination of PIK, and the purpose for which this time is spent is also of great importance.

Some researchers (Kim ve Kim, 2002; Leung, 2004; Gönül, 2002) say that problematic internet users spend more time on movie-music sites, games, chat rooms, pornographic sites, and community sites, and some studies (Ceyhan, 2010; Ceyhan and Ceyhan, 2007b) determined that not problematic internet users spend time on the news, information, shopping, and education sites.

Dr. Ivan Goldberg (1996) was the first to use the concept of an internet addiction disorder, and the original term he used was "Pathological Computer Use Disorder". For individuals who spend much time on the Internet and experience many negativities, as a result, he found the expression "pathological internet use" more appropriate, not "internet addiction".

PIK, which started with Goldberg (1996) and was accepted as a disease, has attracted the attention of many researchers with the diagnostic criteria developed by Young (1996).

While Young (1996) determined the diagnostic criteria for internet addiction, since there is a behavioral impulse control disorder in those with pathological internet use and this disorder does not include the intake of a chemical substance; He adapted the "pathological gambling" criteria in DSM-IV and published the first profound and comprehensive diagnostic criteria for internet addiction.

He excluded two of the criteria for pathological gambling (10 criteria) as he could not adapt them to internet use and used a total of eight criteria. If 5 out of 8 criteria defined

by Young (1996) are experienced, the individual can be described as an internet addict. These:

1. "Excessive mental preoccupation with the Internet (constantly thinking about the Internet, daydreaming about activities done on the Internet, thinking about the next activity planned to be done on the Internet, etc.),

2. Increasingly needing to use the Internet to get the desired enjoyment,

3. Unsuccessful attempts to control, reduce or completely stop using the Internet,

4. Feeling restless, depressed, or angry when internet use is reduced or completely stopped,

5. Staying on the Internet longer than initially planned,

6. Having problems with family, school, work, and friends jeopardizing or losing an education or career opportunity due to excessive Internet use,

7. Lying to others (family, friends, therapist, etc.) about the time spent on the Internet,

8. Affective changes (such as hopelessness, guilt, anxiety, depression) while being connected to the Internet."

Despite the differences of opinion on the conceptualization of PIK, these criteria developed by Young have been used by many researchers (Ceyhan, 2008; Günuç, 2009; Morahan-Martin and Schumacher, 2000; Tsai and Lin, 2001; Anderson, 2001).

On the other hand, Griffiths stated that any behavior (such as internet use) that meets the six criteria listed below could be defined as active addiction (Griffiths, 1999).

"1. Attention/Salience: In this diagnostic criterion, a particular activity becomes the most critical activity in an individual's life and dominates his thinking, feelings, and behavior.

2. Emotional Change (Mood Modification): This situation is related to the person's subjective experiences resulting from engaging in a specific activity and can be seen as a coping method.

3. Tolerance: It is the process of increasing the dose of a particular activity to produce an effect similar to the previous ones.

4. Withdrawal symptoms: It is the emergence of unpleasant emotional states and/or physical effects (anxiety, tremor, nervousness, etc.) due to the sudden cessation or reduction of certain activities.

5. Conflict: Conflicts between addicts and those around them about work, social life, hobbies, interests, or conflicts within the individual.

6. Relapse: The tendency to recur with previous symptoms of a particular activity and the return of addiction to its extreme level after years of avoidance or control."

"Internet addiction", which has no diagnostic criteria in DSM-IV, but has succeeded to be included in DSM-V with the increase in studies on problematic use of the internet in recent years, has been included in the third part of DSM-V with the following criteria by recommending further studies [American Psychiatric Association (APA), 2013]:

"A. Being busy with the internet.

B. Showing destitute symptoms if the internet is taken away.

C. Tolerance: The need to increasingly spend time on the internet.

D. Unsuccessful attempts/failed attempts to control internet use.

E. Continuing to use the internet excessively despite knowledge of adverse psycho-social problems.

F. Loss of interest in the previous hobby, pastime, as a result of this, other than the use of the internet.

G. Internet used to escape or relax dysphoric mood

H. Deceiving family members, therapists, or others about the amount of Internet use.

I. A relationship, job, or educational or career opportunity is jeopardized by Internet use."

Problematic Internet Usage Profile

It is stated that psychological, neurobiological, and cultural factors play a role in forming problematic internet use. (Shaw and Black, 2008).

Biological vision; "It defines that biological and neurochemical changes can create addictive behavior in the person. For example, a person prone to develop addictive behaviors may have a combination of addictive genes or a small amount of serotonin and dopamine that contribute to addictive behaviors. Therefore, attachment to excessive internet use can alter the physiological state, affect the body's homeostasis, and create a feeling of euphoria." (Beard, 2005).

Social view; It has been suggested that there may be familial, social, and cultural dynamics that lead to intense internet use. For example, although the individual first uses the internet to get away from family conflicts, the need to use the internet later turns into a need that causes severe distress and disruption in social, occupational, and other critical functional areas, resulting in addictive behaviors as an effort to mask these problems. As a result of the lack of some social skills that enable the individual to fill his socialization need in places other than computers, there may be pressure and expectations from his friends to engage the internet user with different internet activities" (Beard, 2005).

Caplan (2002) developed a new theory based on Davis's pathological internet use model based on the cognitive-behavioral approach. According to this model, "Individuals with problems such as depression and social isolation have dysfunctional cognitions in terms of social communication, these individuals prefer virtual communication, which they perceive as much less threatening than face-to-face communication. As they feel more comfortable in the virtual environment, intense use of the internet and PIK occur. Individuals who think they cannot express themselves in their social life feel more comfortable in non-face-to-face communication. In this way, individuals do not transfer their negative traits to the person with whom they communicate; on the contrary, it is mentioned that there are positive features that they do not have. Thus, the internet creates the idea that these individuals can impact the person they communicate with. Virtual communication creates the belief in the user that such communication is easy, less risky, and more exciting."

It is seen that the reason why individuals prefer social interaction on the internet is the social isolation and loneliness they experience (Kraut et al., 2002). According to Young (1996), problematic internet users who spend little time with real people in their lives prefer to spend time alone in front of the computer. In addition, according to Yellowlees and Marks (2007), those who have impulse-control and addiction disorders in their stories have a dominant tendency towards PIK and are considered a risky group.

On the other hand, in other studies, the factors affecting PIK were determined, and in one of these studies, the lack of ability of individuals to show themselves was examined as a factor. According to the research results, it is seen that those with low self-disclosure skills prefer online communication instead of face-to-face communication, and online social interaction is an essential predictor of compulsive internet use (Caplan, 2005).

Davis (2001) developed a cognitive-behavioral model on problematic internet use, and according to this model, those who use the internet with problems develop some cognitive and behavioral habits due to their internet use. However, according to this model, as the psycho-social problems of the person increase, the probability of showing cognitive-behavioral symptoms related to the problematic use of the internet will also increase. In addition, according to Davis (2001), those who use the internet with problems show psycho-social problems such as depression and loneliness.

Personal factors may also be influential in susceptibility to PIU. Those with established identity status tend to use the internet less problematically than individuals searching for identity (Ceyhan, 2010). In addition, locus of control is another influential factor. While internally audited persons can limit the internet usage time, external audited ones are in the risk group because they cannot make this limitation (Ceyhan and Ceyhan, 2007a).

The reason that externally controlled individuals are more unsuccessful in using the internet than internally controlled individuals can be given why these individuals think that others or luck are effective in their own lives. In many other situations, internally controlled individuals can determine their behavior and limits in using the internet.

On the other hand, academic achievement stands out as another influential factor. Students with low academic achievement have higher PIK than those with high achievement (Ceyhan and Ceyhan, 2007b; Odacı, 2011).

The sense of loneliness and shyness that individuals have is another important factor in their predisposition to PIK. Findings in many studies show a relationship between the level of loneliness and shyness and PIU draw attention (Caplan, 2002; Ceyhan & Ceyhan, 2008; Davis, 2001; Davis et al., 2002; Odacı & Kalkan, 2010). Again, Odacı and Kalkan (2010) stated that as loneliness increases in university students, PIK also increases.

Effects and Consequences of Problematic Internet Use

According to Young (1999), those who use the Internet with problems prefer to spend time alone on Internet, and they spend decreasingly time with actual individuals in their lives; In addition, people who experience obstacles in their social relations frequently apply to the Internet to create and maintain social relations and prefer the communication over the Internet to face-to-face communication (Kubey et al., 2001). Thus, the person's relations with real-life are increasingly severed, and he begins to be alone (Inderbiten et al., 1997). As a result, internet use becomes a vicious circle for the user (Durak-Batıgün ve Hasta, 2010).

Researchers found that anxiety disorders are the most common comorbidity in individuals who use the internet with problems (Kratzer ve Hegerl, 2008), that obsessive-compulsive disorder mainly accompanies internet addiction (Jang et al., 2008), PIK is associated with obsessive-compulsive disorder (OCD) and depression. (Shapira, Goldsmith et al., 2000), adolescents who use the internet with problems have higher social phobia (Yen, Ko et al., 2007).

Bernardi and Pallanti (2009) stated that the most common comorbidities with PIK are: “generalized anxiety disorder”, “social phobia”, “borderline personality disorder”, “dysthymia”, “obsessive-compulsive disorder”, “avoidant personality disorder”, “hypomania”.

Moreover, Niemz et al. (2005) stated, intensive internet use; has been determined that causes academic, social, and interpersonal problems and low self-esteem. Nalwa and Anand (2003) revealed that those with problematic internet users have higher levels of loneliness.

Whang, Lee, and Chang (2003) stated that individuals who use the internet with problems stated that they fall on the internet more often in cases of stress or depression and more loneliness, depressive affect, and compulsive disorder. In another study, it was found that the group with PIK had more suicidal and depressive thoughts (Kim et al., 2006).

Depression can be considered both as a cause and an effect for PIK. A person who is depressed due to other sociological or psychological factors may turn to the internet for this reason and may also be a problematic internet user. A state of depression can be observed after becoming a problematic internet user. Problematic internet user adolescents stated that they see the internet as an environment that alleviates their depression (Tsai and Lin, 2003).

The literature emphasizes that massive internet use can cause problems in school, family, health, and work and that heavy internet use can disrupt personal or social functions such as sleep and loss of work time (Tsai & Lin, 2003). Accessible evidence shows a link between PIK and psychosocial variables such as depression, social isolation, and adverse effects at home and work (Caplan, 2002). The inability of some individuals to prevent themselves while using the internet may harm and endanger their business and personal relationships.

Barak and King (2000) state that the internet has two sides: positive because it provides convenience to people, such as health, education, commerce, and entertainment, and harmful because it has an environment where they can be exposed to significant risks.

Like other addictions, problematic internet use has various consequences that negatively affect the individual's real life. These results may affect the "academic life of the individual", "relationships", "social life", "work and family life", "physical and mental health".

Marriage Concept

Marriage is the foundation of the family. Marriage defined as in the literature (Tutarel-Kışlak, 1999; Ersanlı and Kalkan, 2008; Ateş, 2012); “where two strangers come together with different values, different cultures, and two separate family histories and mutual solidarity; It is a social system with formal, emotional, behavioral and biological aspects, shaped by social rules and laws that redefine themselves and a fusion where sexual needs are satisfied, which are entirely excluded from social prohibitions in the form of a contract realized as a result of social approval.

Özgüven (2000) categorizes the reasons for marriage into three main groups. These are "biological", "psychological" and "social" reasons. “Among the biological reasons, satisfying the sexual drive is one of the most important reasons for marriage. For psychological reasons, meeting the need for love comes to the fore. Among the social reasons, it is seen that the need for support, acceptance, feeling in harmony, trust, and protection are at the forefront.

While defining this concept in his research on marriage, Geçtan divided marriage into two separate categories: "traditional", in which spouses play a complementary role, and the sharing of obligations between spouses is well defined, and "contemporary" marriage, in which joint decisions predominate (Geçtan, 2007).

Although its function is the same, marriage varies according to society. Types of marriage can be divided into three according to "place of residence", "number of spouses," and "group from which the spouse is chosen", as shown in Table 2.1 (Bağlı and Sever, 2005).

Table-2.1 Types of Marriage

Marriage Classification by Place of Residence **a) Matrilocal:** The man's residence in the woman's house, **b) Patrilocal:** The woman's residence in the man's house, **c) Neolocal:** Men and women separated from their families and lived in different houses.
Marriage by Number of Partners **a) Monogamy:** Marriage with one spouse, **b) Polygamy:** Polygamous marriage, Polygamous marriages are also divided into two; **b.1) Polyandry:** A woman marrying more than one man at the same time, **b.2) Polygyny:** A man marrying more than one woman at the same time.
Marriages made according to the group in which the spouse is chosen **a) Endogamy:** Marriage between relatives, **b) Exogamy:** Unrelated marriages.

Marital Harmony

As a reflection of the rapid social, economic and cultural changes that occur in our society, as in all world societies, marital relations are also changing and becoming more complex, problems in marriage are diversifying compared to the past, and problems of harmony between spouses increase (Şener and Terzioğlu, 2008).

Incompatible marriages can also lead to unhappy and incompatible marriages through generations because negative feelings and judgments about marriage can also be passed

on to the children of incompatible couples, leading to the continuation of incompatible and unsuccessful marriages.

In its simplest definition, marital harmony is the attainment of a balance between the compulsory and voluntary qualities (Tutarel Kışlak, 1999).

Marital harmony is a general term defined as "the success and functionality of the spouses in marriage". Marital harmony also includes the concepts of "marriage satisfaction and happiness" (Kalkan, 2002).

Marriage quality; It is a general concept that includes the concepts of "marriage harmony", "marriage satisfaction, happiness", "marriage integrity", it is "the subjective evaluation of the relations of married couples". High marital quality is thought to be associated with "good adjustment, adequate communication, high satisfaction and happiness in the marital relationship". It is stated that harmony is more critical in predicting the quality of marriage (Erbek, 2004).

Spousal Burnout

When couples fall in love, they expect it to last forever. This expectation can prevent mistakes from being made, reduce common sense, and destroy foresight. Spousal burnout occurs due to continuing these high expectations about love and living with this particular thought. Burnout stems from this significant inconsistency between reality and expectations. Frustration and living with increasing stress lead to a gradual erosion of mood and eventually to peer burnout. Spousal burnout is “a state of physical, emotional and mental fatigue caused by the chronic disparity between expectations and reality that occurs as a result of the intensification of emotional demands in a long-term relationship” (Pines, 1996).

Burnout occurs as a response to the existential dilemma of disappointment in love, the stresses caused by the erosion of love, the constant increase in boredom, and the accumulation of minor tensions. Therefore, it is not possible to attribute burnout to a single cause (Pines, 1996).

Spousal burnout manifests itself with “physical,” “emotional,” and “mental” symptoms of fatigue (Pines, 1996).

It is seen that the variable that best predicts spousal burnout of all married individuals is "marriage adjustment". While only marital adjustment explains 40.7% of the variance of spousal burnout, it is seen that Pines (1989)'s Haifa study and Kafry and Pines' (1980) studies differ with the research results. As a result of the multiple regression analysis of spouse burnout scores in married women, when all variables are considered, it is observed that these variables explain 66.8% of the variance of spouse burnout in married women,

and marital adjustment is the variable that best predicts spouse burnout. It is seen that marital adjustment alone explains 48.8% of the variance of spouse burnout.

Basic Psychological Needs

Needs are "the biological, physical and psychological patterns that occur due to feeling the lack of a factor in human nature and vary from person to person". These needs can be "physiological (air, water, food, sleep, sexuality, etc.)" called primary needs or "psychological (love, compassion, protection, success, learning, friendship, etc.)" called secondary needs (Budak, 2003).

Zhang (2008) stated that there are three types of needs, and these are; "physiological (needs arising from our innate biological systems)", "psychological (resulting from human nature and containing the psychological elements necessary for healthy development)", "social (needs with psychological processes arising from emotional reactions that occur as a result of interactions with people in the socialization process).

Our needs are at the service of the organism; It consists of our passions and desires to continue our lives, ensure our growth and development, and increase our well-being (Zhang, 2008).

Theorists researching needs have put some of these needs in the foreground. For example, Hull (1943) emphasizes "physiological needs such as hunger and sexuality", while Murray (1983) emphasizes "psychological needs" more than physiological (as cited in Deci and Ryan, 2000).

In modern societies, many individuals feel unhappy even though their basic physiological needs are resolved. The number of people who have everything but are unhappy in society is substantial proves the existence and importance of psychological needs (Butler and McManus, 1998).

Psychological needs; are not as apparent as physiological needs; they are needs related to the mind and emotions rather than physical needs that can vary from one individual to another and are thought to be the product of learning. When the psychological need is mentioned, the needs such as commitment, sense of trust, autonomy, freedom, self-realization, being together, being successful, loving, being loved, and social acceptance comes to mind (Oksal, 1986).

Self-determination theory (PSC) states that individuals need support from their social environment to realize their genetic potential. Reinforcer; It includes "external motivations (support, gift, etc.)" as well as "internal motivations (caring, curiosity, etc.)". (Deci and Ryan, 2000).

According to PSC, individuals have three basic psychological needs. These:

1. Competence need is the individual's feeling of being practical and competent depending on his interaction with the environment (Deci and Ryan, 2000).

2. The need for autonomy means that the individual initiates, maintains, and terminates his/her behaviors; It is defined as deciding how to act by taking responsibility for their behavior and acting with free will (Deci and Ryan, 2000).

3. The need for relatedness is when an individual interacts with the environment by wanting to be connected with others and experiences a sense of belonging as a result of this interaction" (Deci and Ryan, 2000).

Autonomy and independence are not the same things (Ryan and Deci, 2006). Independence is primarily a result of the individual's healthy self-development in the psychoanalytic context. It is the separation of individuals from others or not relying on them while making more decisions, setting goals, or taking action on any subject. Autonomy is the individual's free will to set goals and make choices.

Effects of Problematic Internet Use in Married Individuals

As in the whole world, the internet has spread faster than expected in our country and has become an environment where adults spend a long time and cannot control their use. On the other hand, this process has spread to all areas of life and has begun to affect the relations of individuals both with themselves and with society, and it has been seen that it causes problems in business, school, social life, and family life.

Some of the people who spend most of their time in the unreal world have started to have problems in their social, professional, and private lives due to the use of the internet, which they cannot control and prevent, so the issue has started to be widely discussed (Şenormancı et al., 2010).

In this context, such widespread and active use of the internet has caused various problems to arise despite the opportunities and benefits it brings; It has harbored and continues to harbor many risks, especially for individuals who have not reached the internet culture and awareness. The decrease in social interaction in the real world, increasing socialization in the virtual environment, and increasing isolation and alienation in the family environment are just some of these risks. It is observed that adult married individuals are attracted to the virtual world and spend their time on the internet, which is one of the most severe technological developments of the age and has become a part of our lives.

There are also studies (Rajani and Chandio, 2004) that examine the effects of problematic internet use on the individual and social levels. It is thought that the problematic internet

use of married individuals has some adverse effects on the family environment, which is the building block of society. Family structure and family life have been influenced by new media tools such as radio, TV, computer, and the internet (Rompaey et al., 2002). Computers, which entered the home environment in the 1980s, especially with their personal use, turned into a mass media tool with the spread of the internet in the 1990s and changed the structure of societies in many ways like other mass media (Mesch, 2003).

Internet with its structure and functions frequently updated and enriched day by day; It has become an indispensable part of human life and has even become a new member of the family, which is the basic unit of society and has begun to change the family and social structure and values. The internet, which eliminates the limitation of time and space and provides visual and auditory communication, can be an opportunity for families far from each other. However, with the excessive use of the internet among family members in the same environment, the decrease in the standard time and activities that the spouses spend together is perhaps one of the biggest negativities of the internet in terms of intra-family communication. Spouses who spend their daytime separately also spend their evening time on the internet, which is the only time they will share in common, and prefer virtual environments instead of actual and warm relationships in real environments, which will undoubtedly affect the communication of spouses with each other negatively and start the process of separation from each other.

People want to marry for many bio-psycho-social reasons, such as sexual need, having children, economic factors, or society's expectations. In addition to these, meeting psychological needs such as love, intimacy, emotional sharing, and support can be considered one of the reasons for marriage, as it contributes to the well-being of individuals. The realization of all these functions requires that the relationships of the spouses be solid and healthy. Marital adjustment is a significant predictor of a healthy marital relationship. Individuals' personality traits, way of living in a relationship, and expectations are essential in ensuring marital harmony.

One of the problems caused by problematic internet use in the family is that it causes negligence by preventing the basic needs of family members from being met because spouses spend much time in front of the internet. Decreased sharing causes the weakening of family ties.

In another study conducted in Pakistan in 2004 to determine the effects of the internet on society, a survey was conducted with internet users from all segments of society and all age groups. As a result of the research, it was found that the internet in Pakistan impacted society in general, resulting in increased internet use, increased loneliness and depression, reduced social ties, and weak family communication (Rajani and Chandio, 2004).

The fact that adult married individuals who use the Internet with problems start to spend a significant part of their time on the Internet can initiate the processes of breaking away

from their family life, and their unreal world and virtual friendships can create a basis for the individual to live in a fantasy world and escape from the realities of life (Fortson et al., 2007).

It can be said that individuals who experience isolation in their family or social life will also disrupt their daily responsibilities and will be adversely affected physiologically and psychologically. However, the relationship in the family environment is of particular importance in terms of a healthy communication and interaction environment, meeting the psycho-social needs of family members, and thus bringing healthy individuals to the society.

Suler (2004) argues that people who fail to meet their personal needs such as love, intimacy, and belonging in the real world may turn to the internet, which provides a safe and comfortable environment to satisfy these needs, and as a result, the internet addiction emerges. In the light of these opinions, married individuals who cannot find the love, closeness, acceptance, and approval they seek in the real world may also obtain what they are looking for from the internet by using different virtual identities.

It has been revealed that individuals who use the internet intensively have less interaction with their family and friends and spend less time with them (Kraut et al., 1998).

According to Kandell (1998), individuals who have difficulties in their interpersonal relationships and/or other areas of life turn to the internet to avoid or delay their problems. Sanders et al. (2000) also showed that heavy internet use is related to low social ties and lack of support. Whang et al. (2003) stated that internet addicts are more stressed, lonely, and depressed than potential addicts and non-addicts. Meaning this relationship; The psychological needs can explain the reason that leads the individual to use the problematic internet that marital problems cannot meet, and it can also be considered that the individual may experience marital problems by shifting away from his family and spouse over time due to problematic internet use.

The stress situation that occurs with the disagreement in marriage is one of the most important causes of spouse burnout. On the other hand, spousal burnout is "a state of physical, emotional and mental fatigue caused by the chronic difference between expectations and reality, which occurs as a result of the intensification of emotional demands in a long-term relationship" (Pines, 1996). It is inevitable that this burnout situation in the marital life of the spouses negatively affects other areas of their lives. According to Çapri (2008), changes in family, profession, and marriage affect the person's daily life, causing him to experience many problems (personal, social, professional, and familial) and suffer burnout.

The problem of internet use may be related to some unmet psychological needs of married individuals and may tend to meet these needs via the internet. In this process, the internet

may turn into problematic use, which may have negative consequences, and it can be thought that this situation will cause severe damage to communication and interaction within the family.

There are studies on adolescents on this subject, and studies have shown that with the intensification of internet use, adolescents tend to meet some of their psychological needs that they can meet in daily life through the internet (Shen, Liu, and Wang, 2013). Adolescents who try to satisfy their needs over the internet may also experience severe deprivation due to unmet needs. Deci and Ryan (2000) argued that if psychological needs are not sufficiently satisfied, people may become psychologically disturbed, and self-destructive behaviors may develop to compensate for this.

Considering the negative consequences of the intense use of the internet in satisfying needs, it is stated that adolescents can be dragged towards addiction, which will cause significant damage to family and friend relations. (Şahin and Kesici, 2009).

Adults who cannot assemble their social support and psychological needs in the family and have lousy family relations can also spend intense time in the virtual environment to feel much better. This situation reflects negatively on work, family, and social life areas, and it is thought that this negative reflection pushes adults to use the internet even more problematically.

When we think of marriage as a structure that regulates social reproduction and forms the basis of society in terms of its function, maintaining this structure depends on meeting the mutual psychological and biological needs of individuals in their marriages. Meeting the needs significantly affects marital adjustment (Gökmen, 2001). In addition, the marriage relationship is considered the most critical social tradition in which our emotional needs are compensated, which is accepted in every society (Sharif et al., 2013). After meeting their needs such as hunger, thirst, and security, individuals want to meet their higher-level needs by turning to their psychological needs such as closeness, compassion, autonomy, success, appreciation, relationship, and self-actualization. Although these needs are not vital, they are essential for individuals to add meaning to their lives and be happy and peaceful.

Problematic internet use of married individuals who spend most of their time on the internet causes them to experience problems in their family life as well as in many other areas of their lives (Rompaey et al., 2002; Kraut et al., 2002; Rajani and Chandio, 2004; Mesch, 2003; Bayraktutan, 2005). In addition, in Candemir Karaburç and Tunç's (2020) study, problematic internet use was determined as a severe spouse predictor burnout.

In a study carried out to determine the effect of children on the internet access of families at home, data were collected from 38 families and 31 children through qualitative and quantitative research methods. In line with the findings obtained in the research, it was

concluded that internet access and internet use began to be an essential factor in the occurrence of domestic disputes and incompatibility (Rompaey et al., 2002).

In order to determine the effects of internet use, a survey was conducted with 169 individuals in 73 households with internet connection at home in the form of a three-year follow-up study. The findings obtained during the two years before and after the internet connection in these households determined that the increase in internet use was associated with a decrease in family communication, narrowing of the participants' distance and close social circles, and increased feelings of depression and loneliness. In addition, although most internet use is aimed at increasing social communication, it has been concluded that internet use can generally reduce face-to-face communication, and weak relationships can replace solid social relationships. (Kraut et al., 2002).

According to the study of Griffiths (2000), one of the situations for excessive internet use is excessive use of the internet to overcome or neutralize other disabilities (lack of social support in real life, low self-esteem, physical disability).

Niemz et al. (2005), 18.3% of the participants were identified as problematic internet users due to their study, and these users stated that excessive internet use causes academic, social, and social problems. Young (1996) found that 2% of the 496 people who participated in his research, who use the internet little, 45% of those who use it moderately, and 53% of those who use it heavily, have social relations problems. According to him, these people spend less time with real-life people, fulfill their responsibilities less, and have problems in their relationships with their friends, spouses, and children.

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Chapter 7

PARADIGM CHANGE IN CAREER COUNSELING IN TURKEY

PARADIGM CHANGE IN CAREER COUNSELING IN TURKEY

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INTRODUCTION

This section aims to provide an overview of the historical development of career guidance in Turkey to date, highlighting the key milestones and challenges during the more than fifty years of the existence of career guidance and career counseling services in the country.

In history, while the studies carried out within the scope of vocational guidance at the beginning were in the form of clarifying the characteristics of individuals with tests and helping their preferences in this direction; at present, within the scope of career planning, it is seen that a service aimed at increasing the awareness of individuals with different techniques, making choices appropriate for the era, and helping in the decision indecision points in the later stages of the career process is continued. Career counseling is a career choice and tries to contribute to the development and maturation of the individual in points such as education, employment, career choice, and career change within the scope of the individual's life plan.

Kuzgun (2014) states that the extinction of some professions or changes in professions and even the creation of new business areas can be explained depending on the rapid developments in recent years, industrialization, and changes in the job market.

In the field of career development, traditional approaches and models in the 21st century, based on theoretical research or applications, are replaced by science-based theories, taking into account the life story of the client and an effort to gain individual responsibility in the plan. At the same time, career counseling approaches supported by postmodern and constructivist philosophy approaches have become more prominent in the 21st century (McMahon, Watson, Chetty, and Hoelson, 2012).

Postmodern theories, which reconsider career development by combining modern

and traditional theories and including counseling practices, tend to contribute to the individual's life structure. Postmodern counseling approaches, in which career counseling is considered a career choice, including practices that provide new ways for clients to solve their problems that affect their career decisions and increase their awareness of reaching their goals.

Since the 21st century, career counseling has gained more importance; it has been discussed how much career counseling practices overlap with psychological-personal-emotional counseling (Amundson, Harris-Bowlsbey, and Niles, 2009; Capuzzi and Stauffer, 2012; Savickas, 2011).

While discussions about the nature of career counseling continue, Amundson et al. (2009) listed some myths that correspond to false beliefs about career counseling:

1. Career counselors have standardized evaluation criteria by which they can inform people which profession they should choose.

2. Work-related decisions can be made independently of other roles in life.

3. Personal problems of individuals are not addressed in career counseling.

4. Career counselors do not need expertise in the field of comprehensive counseling during the counseling process.

5. Career counseling does not take into account the life context and cultural side of the client.

6. Career counseling is only necessary for individuals to make career decisions.

7. Career counseling ends when the client makes a career decision.

Considering the myths mentioned above, career counseling is an application belonging to the general counseling class. Swanson (1995) defines the function of career counseling as “a face-to-face psychological interaction between the counselor and the client, mainly focusing on the job or career”. A practical and sensitive understanding envisages helping clients in their professional and career decisions by considering all their human experiences. Parsons (1909) called vocational guidance at the beginning of the 20th century also formed career counseling fundamental. At present, although career counselors seem to be only career-oriented, they try to help individuals at any stage of their careers of different ages and have career concerns (Cited by Yeşilyaprak, 2011).

The career counselor supports the client in making decisions on various issues in different age periods, especially in education, vocational, or business, and in reaching the most

suitable option among the alternatives. Another definition of career counseling (Kidd, 2006) stated is "one-to-one interaction between the counselor and the client, which includes applying many communication skills known from psychological theory to help the client make career-related decisions and career problems". Career counselor supports the career process of the client by integrating both, as concerns about career and personal-emotional concerns are often observed intertwined in career counseling.

Basic Concepts of Career

Occupation: It is a set of activities based on the knowledge and skills acquired by specific education, the rules of which are determined by the society, and which are intended to provide a helpful service or product to other people, which a person does to earn a living (Kuzgun, 2009).

Job: A group of similar activities carried out in a particular profession. It defines tasks in a custom workspace. Work is putting into practice professional knowledge and skills. It is the task activities performed while operating the profession(Yeşilyaprak, 2011).

Professional Maturity: It is the ability of individuals to fulfill their professional development tasks belonging to their developmental periods and complete these tasks successfully (Kuzgun, 2009).

Career counseling: Career counseling, which can also be expressed as career psychological counseling, is a formal relationship (psychological counseling process) conducted by a professional counselor in problems related to career development (for example, career choice, decision making, work stress, career search, etc.) with the client individual or group. refers to the consultation process) (Herr, EL, Cramer, SH and Niles, SG, 2004).

Career beliefs: These are the positive and negative judgments and assumptions that an individual has about himself, professions, careers, and jobs. (Peterson et al. 1996).

Career Adaptation: It is the level of readiness of an individual to cope with new conditions in a healthy way due to developments in professional life and to adapt to changing business life (Savickas, 1997).

Career indecision: It is challenging to decide on the most suitable option among career alternatives after the difficulties encountered when an individual has to make decisions about their career (Saka and Gati 2007).

Career Decision-Making Difficulties: The indecision situation causes individuals to turn to different careers instead of the most suitable career option among their career opportunities due to reasons arising from themselves or their environment (Gati 1986).

THEORIES THAT FORM THE FOUNDATION OF CAREER COUNSELING APPLICATION

Theories that form the basis of career counseling practices carried out in the world and our country from the beginning of the 20th century have differentiated depending on the historical time, the needs of the age, the differentiation of the meaning and importance of social, cultural, economic, education, employment, and the human factor. In this section, the theories mentioned from the 20th century to the present are included. The first wave of career counseling was an approach that started with Parsons in the early 1900s and continued with Holland's (1997) approach, later called Trait-Agent Theories, and consisted of matching the characteristics of the individual with the characteristics of the occupations. The second wave has been identified with the approach of Super (1990), which began in the mid-20th century and focused on managing lifespan and life roles. Presently, the third wave focuses on making meaning by working on life design, which was introduced at the end of the first decade of the 21st century and identified with Savickas's (2011) career-structuring approach (Hartung & Santilli, 2018; Taylor & Savickas, 2016; Severy, 2008).

Theories Based on Person and Environment Harmony:

Approaches under this heading, which are based on diagnosing and evaluating the client's characteristics using objective tests, support the client to recognize job alternatives, evaluate options to make an appropriate choice, and make suggestions to the client, are explained. Career approaches based on the harmony of person and environment are based on the extent to which the characteristics of the person and the characteristics of the profession overlap. The Work Adaptation Theory (TWA) considers the awareness of individuals who will choose their profession and the profession's professional behavior (Dawis, 2002, 2005; Dawis & Lofquist, 1984). Career choice is seen as the continuation of harmony and balance between these two. Thus, this theory describes two processes in which the individual is involved. The first is the search for a working environment (E) that suits the person's needs (P). The second is that the work environment (E) seeks an individual with skills to match their needs. While the satisfaction of the individual depends on his needs, the satisfaction of the work environment is based on the individual's occupational functionality. Therefore, the individual (P) is mutually beneficial (with E) by maintaining acceptable behaviors in the appropriate environment (Jena & Nayak, 2020).

Holland's typological model is one of the approaches that make essential contributions to career counseling as a diagnostic orientation based on person-environment fit. In this approach, the function of career counseling is to evaluate the client's professional interests and enable the client to evaluate alternative jobs and professions in line with their interests. According to Holland, career choice is an expression of personality. Holland has identified six personal orientations (personality types) that develop based on genetic factors, environment, and parental influences. Holland stated that professional interest

and personality are arranged in a hexagonal structure according to the RIASEC order and can be coded as Realistic (R), Investigator (I), Artistic (A), Social (S), Entrepreneurial (E), and Traditional C (Jena & Nayak, 2020). Each person may also have all six types in varying amounts. Like personality types, occupational settings fall into the same six types because environments are defined by the people (types) in that environment.

Within the scope of the practices based on person-environment accordance approaches carried out within the scope of an expert's advice, within the expanse of evaluating the personality traits, not only the interests are focused on, but also the effects of values (Tinsley, 2000), abilities and other individual aspects are taken into account in order to enable the client to evaluate the career options more realistically. In a study conducted by Ackerman and Heggestad (1997), they examined the relationships between talent, interest, and personality traits and expressed an assortment by classifying these three areas: social, traditional (office), intellectual (science/mathematics), and realistic (cultural). The results of this research, which suggests that career counselors use measurement tools that integrate various qualities of clients such as abilities, interests, and personality, indicate that more appropriate adjustment frameworks can be determined for the client. These theories, which have been criticized for focusing more on career decisions and ignoring the factors that will affect the individual's subsequent career development, form the basis of practices in which individuals and work environments are accepted to be in constant interaction over time. In contemporary versions, the client is seen as an active participant in the career counseling process (Swanson, 1995).

Developmental Theories:

Theories classified under this heading state that career choice or the planned career plan is a life-long, flexible and continuous process and that career decision is not limited to standard test results. In addition, these theories have brought a different direction to career counseling by using the concepts of developmental psychology such as developmental tasks, developmental goals, career maturity, stages of development, development areas.

Career counseling practices based on a developmental approach contribute to completing career tasks during the development periods in parallel with the needs of the relevant development period, thereby increasing awareness about career, consequently making a more sensible career decision and being more successful in career management. This process contributes to the development of both decision-making skills and age-appropriate career maturity.

One of the most significant contributors under this heading is Donald Super. Super stated that career development and career choice are related to one's self-concept. Super (1990) defines self-concept, mental and physical growth, environmental characteristics, personal experience, etc. It is a complex structure between Explaining career development by associating it with self-development; Super (1990) classified self-development as life

stages consisting of "growth, discovery, establishment, maintenance, and separation". This theory, which explains the career development process by associating it with lifelong self-development, criticizes career counseling practices using static and standardized test results, giving more importance to life-changing individual characteristics in career counseling.

The narrowing and reconciliation theory developed by Gottfredson focuses on the professional processes that children experience developmentally. As in Super, self-concept is central and determinant of career choice. From childhood, as individuals develop, they limit (narrow) their career choices and compromise with occupations (giving up on unavailable or unsuitable occupations). Gottfredson (2002) describes this developmental period in four stages:

1. Orientation to size and power (3-5 years)
2. Orientation to gender roles (6-8 years)
3. Orientation to social values (9-13 years/age)
4. Orientation to the unique inner self (14+ years)

Children who tend to choose occupations suitable for their gender at younger ages (6-8 years) tend to choose occupations consistent with their perceived social class, that is, have social values. Over time, they eliminate certain occupations that are incompatible with talent, intelligence, and culture. In the youth years and later, they take more realistic steps about which profession should be chosen to develop personal self-awareness (Gottfredson, 2005).

Ginzberg's approach to career counseling defines career development as a series of events in a predictable order. Each aspect of this developmentally defined process presents problems that need to be solved developmentally for the individual. Developmental theory in career counseling, developed by Ginzberg, Ginsburg, Axelrad, and Herma in 1951, explains career choice based on a three-stage process: (1) Period of fantasy choices (up to age 11), (2) Period of tentative choices (11- 17), (3) The period of realistic elections (Yeşilyaprak, 2011).

Throughout the 20th century, these approaches have dominated the field of career counseling, either in theory or in practice. Since the 21st century, the rapid change that has taken place in the technological, scientific, economic, and social fields in the world has impacted the individuals who will choose a career and the business world. Wall (2004) states that the principal values of individuals who have structured their careers since the 21st century are primary values such as high income, getting a good position quickly, having fun in what they do, being praised. Savickas (2009) states that there is uncertainty in the business world with globalization and flexibility in response to this uncertainty. Therefore, this change in the business world, the choice of profession, rather than limiting a person's whole life to a one-time career choice, has led to the definition of

career structuring under career counseling services. Thus, instead of traditional approaches that match the characteristics of the person with the characteristics of the professions; It has necessitated approaches that take into account that people continue to construct a lifelong career in line with their needs for direction and search for meaning in their lives (Savickas, 2013).

Professional Development Process:

The most complex stage of the professional development process is where the choice of profession occurs. Young people make an important decision about their future while choosing their profession in this period; although the choice of profession seems like an instant decision, it is a decision taken at the end of a professional development process. The professional development process refers to the developmental stages that start with realizing a professional idea from an early age and pass until having a profession in adulthood. Although factors such as supply-demand, cultural factors, some demographic variables, the status of the profession, which are the determinants of the choice of profession in Turkey, come to the fore, the choice of profession is not a decision made all at once. Career counseling should be provided to the individual both in the development process and in the decision phase.

Isaacson (1986) explains that the professional development process has five stages:

1. Awakening and awareness: This phase starts in the pre-school period and lasts until the primary school period. At this stage, the child realizes that the people around him have different professional occupations and the diversity of occupations, together with the formation of occupational awareness. Towards the end of this stage (in the last years of primary school), children realize differences and similarities in various characteristics (interests, Abilities, purpose, and motivation) of themselves and others.

With the start of developmental guidance practices in Turkey, activities are included in the pre-school programs regarding career development and support development tasks, aiming to increase students' awareness of occupational diversity and individual differences at the pre-school education level.

2. Discovering and researching professions: This stage corresponds to the age range of 12-15, corresponding to the secondary school years. In this period, the child learns more about the standard and different aspects of professions and people, exploring and researching. The process of discovering and examining the professions that started in this period continues throughout life.

Interest and curiosity about occupational diversity and individual differences in the preschool period lead to more information and more research in this period.

3. Decision-making: In this period, which covers the ages of 15-18, which coincides with the high school years, the young person starts to match the information they collect with the information about the profession he/she will choose or about themself and to draw a frame of their own. Although these thoughts may seem temporary, they turn into a more straightforward career decision towards the end of this age period.

4. Preparation for the profession: This period, which coincides with the age range of 18-24, corresponds to the vocational education period that the young person receives in their chosen field. They try to be ready to practice the profession by improving their professional knowledge and skills. This period can also be seen as the period when they started looking for a job.

5. Job placement: This period brings the knowledge and skills gained during vocational training into practice, where the young person now takes their place in his inner world. Job placement: this period now takes its place in the inner world of the youth, thus putting the knowledge and skills gained during vocational training into practice. On the other hand, he continues his professional development.

POSTMODERN APPROACHES IN CAREER COUNSELING

Post-modern approaches, which give a different perspective to career counseling by leaving the positive scientific point of view based on pure cause and effect relationship, emphasize the belief that there is not a single, unchanging reality for the individual in career development, but rather that each individual builds their truths and realities. According to Yeşilyaprak (2011: 35; 2012: 108), in the case of examining the change in career counseling services in the historical process, the understanding of the person and profession matching, vocational information, focusing on the 16-19 age range to make career decisions, assisting in career decision making or creating a career path exists. However, these understandings are now being replaced by understandings about creating a career story, serving all age groups, career development throughout life, and structuring life. The literature on career theories in this direction focuses more on postmodern themes, the effect of constructivist approaches, and efforts to combine career theories (Yeşilyaprak, 2011). Especially with the changes brought by the 21st century, a paradigm shift was needed in career counseling (Yeşilyaprak, 2012). When this paradigm shift, which is called the third wave in the field of career counseling at the beginning of the 21st century, is examined, it is seen that many strategies are considered postmodern approaches and are generally narrative-based.

Brott's (2001; 2004) Career Story Approach, McMahon, Patton and Watson's (2004) Systems Theories Approach, Brown's (1995) Value-Based Approach, Niles, Amundson and Neault's (2011) Career Flow Theory' are a few of them. The current era, also defined as post-modern, has increased the need for career counseling in a constructivist approach based on shaping people's lives, not just their career choice (Bucassa, 2007). One of the

career theories based on the structuring of life that emerged as a necessity of this age is the Career Structuring Theory presented by Savickas.

Constructivist Approach in Career Development:

Post-modernism, which developed as a reaction to modernism, which emphasized the importance of having rationalist and scientific evidence, also triggered the development of constructivism that emerged in line with the needs of the age. The transition from modernism based on purely scientific evidence to post-modernism based on the belief that multiculturalism and diversity have also affected the individual perspective.

This understanding, which does not discuss a purely empirical-scientific reality and has a different point of view, believes that the representation of reality in the individual is structured. Since people perceive and interpret their reality or truth, not just scientific truth, their reality needs to be structured (Sharf, 2006). In other words, the constructivist approach argues that individuals can reshape the events, experiences, turning points, and preferences in their lives with their perspectives. Career structuring theory, which also considers psychodynamic, environmental, and developmental factors in career planning, and is therefore also seen as a meta-theoretical approach; It proposes to manage the structuring process by emphasizing the harmony of individuals' change with their environment, as well as how individuals will construct their realities from a personal point of view (Maree, 2014; Akman, 2016).

Pointing out that the flexibility observed in the business world in the 21st century is a significant change and that the changes in this period also include changes that cause anxiety and insecurity for the individuals who will make career decisions, Savickas (2012) emphasizes that there are essential differences between the skills required from the individual in this century and the skills in the 20th century. Savickas (2012) states that from a period in which people infiltrate a job where they can work for many years and can live their lives by relying on bureaucratic organizations, they have entered a period in which they cannot plan to work for 30 years in a business environment where career planning can take place within the boundaries of a business or an institution. The changes and needs that have taken place with the 21st century also bring innovations similar to the characteristics of the period in the theory and practice of career counseling. For this reason, in counseling sessions based on career construction theory, a career is not viewed as moving on a path or climbing a ladder but as an individual is telling their own story. Even if the transitions in the lives of individuals are small as turning points, it helps to develop a more satisfying lifestyle by focusing on their stories and their effects on self-development and intervening in the points that need to be regulated if necessary (Savickas 2013). The purpose of the sessions based on career construction theory is not to help individuals choose a career but to help them create meaning and purpose in their lives through self-knowledge, relationships with the environment, and awareness of these issues (Savickas, 2005). This is why the counseling process based on career construction

theory is also called Life-Designing Counseling. By revealing the critical themes in the life stories of the clients, it is aimed to help the client to understand the world and to see the driving sources, needs, and dynamics behind the choices they will make, understand the purpose that guides his behaviors and to make his life meaningful. One of the contributions of this theory to the field of career counseling is the use of qualitative assessment techniques instead of the standard scales and tests used to determine the characteristics of the individual, depending on the feature-factor approach throughout the 20th century. It is believed that the client's career should be structured based on their own story rather than standardized tests. Through the interview, it is aimed to reveal the themes of an individual's life by enabling the client to review his life structure, thus raising awareness about the issues that need to be structured in his life.

The more dominant approaches in the field of career counseling in the past years are positivist approaches. At present, these approaches have left their place to postmodern approaches that evaluate individual facts, local cultural values, and information sources related to them. Postmodern assessments emphasize subjective personal activity stories and experiences rather than generalizable career development in the career developing process.

Narrative Career Counseling:

Narrative-based approaches are portable, expressing compliance with the post-modern approach to career counseling. In narrative-based career counseling, clients are helped to rediscover, make sense of, and conceptualize their life stories. Therefore, clients gain a new perspective on whether the events in their lives and the decisions they think are the result of the events are consistent and realistic. Consequently, the areas in the clients' life stories that are missing or not adequately conceptualized are reformulated, and more space is given to the future career development of the client. Cochran (1997) also argues that career counseling can be distinguished from other forms of counseling, particularly by focusing on narratives dealing with future career development. Cochran thus states that the rewritten story, including plans, will incorporate consistency with the past, action, and efficiency for the future.

Brott's (2001) Narrative Approach

The narrative approach developed by Brott seeks to create a new self by writing new stories to contribute to the journey of self-discovery and being themselves based on the past stories of the clients. Personal stories are created based on the assumption that everyone is an expert on their individual life. The client is encouraged to talk about the new story by going through the stages of "creating the structure", "reviewing," and "reconstructing" this structure.

Chaos Theory of Creer– CTC:

Chaos theory in career counseling emphasizes constant change, the centrality and importance of chance events, the potential for small events to have disproportionately extended effects on subsequent events, and the importance of dramatic shifts in career behavior. This approach challenges traditional approaches to career counseling, assumptions about the importance of chance events, and the idea that counseling should aim to reduce career options to a rational and manageable set of logical choices. This new approach requires new techniques and tools to assist the counselor and client. Four different techniques and exercises designed to assist a counselor in applying chaos theory in practice are outlined. Techniques include reality testing, limits of rational decision making; using media to illustrate non-linear and coincidental events; and using forensic techniques to establish historical and contemporary patterns of influence on career behavior (Pryor & Bright, 2005).

Planned Luck Theory:

According to Betz (2008), one of the theories in career counseling, which has gained popularity since the beginning of the 21st century, which is also known as third-wave career theories, is the Planned Chance Theory, as can be seen when the literature (Sharf, 2010; Valickas, Raišiene & Rapuano,2019; Chen, 2005; Hagevik, 2000; Magnuson, Wilcoxon, & Norem, 2003) is examined. However, when the studies conducted in the field of postmodern oriented career counseling in our country are examined, it is seen that there are studies on Career Configuration Theory, but there is a limited number of studies on the Planned Happenstance Theory (Ulaş-Kılıç, 2019).

An individual who pursues a career throughout life has to adapt to various changes and complex environments constantly. Among these, unforeseen events are an essential component that affects individual career development (Mitchel, Levin & Krumboltz, 1999). However, in the career counseling process, traditional career counseling theories (theories based on person-occupation adjustment) that focus on the concept of control rather than the concept of change included unpredictable events. However, nowadays, having a set of professional qualifications is no longer considered sufficient for successful career development. The planned chance theory is a comprehensive framework that provides an explanation and solution on how to manage a career in conditions of unpredictability, how to take advantage of unexpected events and how to turn them into opportunities (Krumboltz, Foley, & Cotter, 2013; Eissenstat, & Nadermann, 2018). The concept of "planned luck", first introduced by Mitchel, Levin & Krumboltz (1999), is now an inevitable and desirable reality in everyone's career plan. When the literature is examined, there are experimental studies (Betsworth & Hanson, 1996; Hordósy & Clark, 2018) explaining that the luck factor is an essential factor in the stages of a place.

POSTMODERN TECHNIQUES IN CAREER COUNSELING

Postmodern career counseling practices are about matching the characteristics of the person with the profession and a process that does not feel obliged to depend on the test results applied with the client. Today, many individuals at the stage of career choice take into account the psychosocial factors that may accompany their preference concerns. At present, more qualitative techniques are used in career counseling. Some of these are described below.

1.Four-step career research (Cozma, 2007): It is one of the exercises used to increase the client's awareness of themself and the profession. Exercises can be applied under special activities, successful lives, transferable skills, prized values, or self-affirmation. This technique, which is also used predominantly for adults who are in search of a new profession, consists of stages, is "What am I doing now?", "What can I do?", "What are the options before me?", "Which profession is suitable for me?" Each stage includes questions by the career counselor to increase the client's awareness about himself and the professions and help them make a sensible decision (as cited in Aydemir-Sevim, 2011).

2. Discussing irrational beliefs (Hackney & Cormier, 2013): In order to ensure that clients who are at the stage of choosing a career or encounter various problems in business life can gain rational belief systems by changing their irrational thoughts by making the client realize that their belief systems cause the indecision or various problems they experience. Discussing irrational beliefs can be applied "cognitively" based on one's thoughts, "imaginative" depending on the dreams about how individual life will be, and "behavioral" based on what they do (as cited in Aydemir-Sevim, 2011).

3. Using metaphors: Metaphor is a way of understanding the world. It is not just the formal use of language. The metaphor of journey (Inksen & Amundson, 2002) is commonly used for the profession. In the application of this technique, an open-ended, flexible structured travel metaphor can be used, for example: "Is the trip planned?", "What are the obstacles?", "What are the cornerstones, decision points?" Other than the metaphor of travel, metaphors such as taking a photograph of the moment, dynamics, different perspectives, changing timeline concepts can also be used (Aydemir-Sevim, 2011).

4. Occupational Q-Gram (Thorngen & Feit, 2001): This practice begins by asking the client's first career choice that they remember. They draw on paper a symbol of choice. Then the counselor may ask questions such as: "How old were you when you made this choice?", "Did someone else direct you to this profession?", "What were your chances of fulfilling this request?" Subsequently, questions about the awareness of the client's characteristics can continue with questions about the social, developmental, personal, and cultural environment. Consequently, the client is helped to realize the different effects that affect the profession they think to choose today and the profession they think about first. It is ensured that the client gains insight by revealing the themes and patterns involved

in the decisions in the past or present. Therefore, it contributes to realistically evaluating the career opportunities that one may encounter in the future (as cited in Aydemir-Sevim, 2011).

5. My pessimistic and optimistic side (Nathan & Hill, 2006): In this exercise, taken from the Passed sub theory, the pessimistic and optimistic sides of the client are asked to enter the conversation. The issue on which the client will decide is defined as action (e.g., starting a course). Then, for this action, what the optimistic side says and the pessimistic side are expressed in writing or verbally. While expressing these, it is tried to raise awareness of the client's feelings, thoughts, or concerns.

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Chapter 8

DEVELOPMENTS IN THE AREA OF TURKISH EDUCATION AFTER 2000'S

DEVELOPMENTS IN THE AREA OF TURKISH EDUCATION AFTER 2000'S

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INTRODUCTION

The period we live in goes down in history as a period in which societies have undergone great social, political, economic and technological changes. In this process, although different forms of communication and tools have emerged, language continues to exist as the most basic communication tool. Language is a reflection of societies' worldview, lifestyle, culture and relations with other societies (Aksan, 2001). Language undertakes the task of transferring the cultural accumulation of societies to future generations (Kaplan, 2003). In this respect, language is actually in a position that represents the cultural reality. In this sense, all states attach importance to language teaching in their education systems. Every nation wants its language to be learned by new generations in the most effective way. In this context, there have been important developments in the language teaching process after the 2000s within the framework of contemporary educational approaches.

Turkish, which has a history of thousands of years, is one of the oldest and rooted languages in the world (Hengirmen, 2011). In this sense, it is seen that Turkish has been taught both as a mother tongue and as a foreign language from past to present. According to Çarkıt (2020), after the proclamation of the Republic, teaching Turkish as a mother tongue; in the 1980s, teaching Turkish as a foreign language gained a programmed and systematic structure. Especially after the 2000s, there have been important developments in the area of Turkish education, depending on the scientific developments in the area of education. Constructivist approach has been adopted in the teaching process and Turkish Course Curriculum has been updated with this understanding. In this context, 2006, 2015, 2017, 2018 and 2019 Turkish Course Curriculums have been prepared. This situation has also affected the academic studies in the area of Turkish education. After the 2000s, a rapid academic development has been achieved in this field.

Revealing these recent developments in the area of Turkish education is considered

important in terms of shedding light on future applications. For this reason, in this section, the applications and developments in the area of Turkish education after 2000 are discussed and examined. Thus, it is aimed to lay the groundwork for comprehensive studies that will deal with the historical course of Turkish education. Because it is seen as a need to comprehensively reveal the stages of Turkish education and the variables that are effective in the stages. It has been observed that since 2000, Turkish education studies have been carried out on basic language skills in the context of both curricula and academic studies. For this reason, the chapter titles will be structured on developments in basic language skills. In this context, developments in the area of reading, listening, writing, speaking, grammar and early literacy will be emphasized. The developments in the area of teaching Turkish as a foreign language will also be discussed as a separate topic.

Developments in Reading Education After 2000s

Reading is one of the basic skills that contributes to the thinking process with language skills. Reading is the process of interpreting, evaluating and making sense of the signs and symbols perceived by the eye by the brain (Yalçın, 2012). Reading is a skill based on phonology, syntax, meaning and discourse skills (Geers, 2003). Reading opens the doors of different worlds to the individual; It can be considered as a language skill that allows the individual to learn new information, and offers the opportunity to get to know the changing world conditions and different lives. In today's world, reading is seen as a basic need in all areas from health to education, from economy to commerce (Çarkıt, 2020). These needs can only be answered by being a good reader (Güneş, 2017). In this context, it is aimed that today's individuals in the education process can become good and effective readers after they acquire the first literacy skill. As a matter of fact, today's studies in the field of reading aim to raise individuals who can closely monitor the changing and developing world conditions and make lifelong learning a part of their lives.

After 2000, in the education process in Turkey, a transition was made from traditional approach to contemporary approaches and models, and this situation was also reflected in the studies in the field of reading. In this period, issues such as reading strategies (Canan & Arslan, 2017; Karatay, 2009; Özdemir, 2018; Topuzkanamış, 2010); reading anxiety (Çeliktürk & Yamaç, 2015; Melanlıoğlu, 2014; Çevik et al., 2019); reading motivation (Katrancı, 2015; Yıldız & Akyol, 2011; Öztürk & Aydemir, 2013); reading habits (Batur & Bek, 2010; Can et al., 2010; Odabaş, 2008) attitude towards reading (Balcı et al., 2012; Baştuğ & Keskin, 2013; Özdemir & Şerbetçi, 2018; Sallabaş, 2008); screen reading (Güneş, 2010; Maden, 2012; Macit & Demir, 2016); critical reading (Ateş, 2013; Çiftçi, 2006; Karabay, 2013); reading difficulties (Akyol & Kodan, 2016; Dağ, 2010; Ekiz et al., 2011) are seen as the main topics studied by researchers in the field of reading. This situation shows that the studies carried out in the field of reading in Turkey after 2000 are in parallel with the studies carried out in the international arena.

Today, Turkish lessons in schools are carried out according to the 2019 Turkish Course Curriculum. Contemporary education approach, especially the constructivist approach, has been accepted in the relevant program. In the program, the acquisitions in the reading area were grouped according to classes and on aerage 35 acquisitions were included at each grade level. Explanations were made for the achievements and the level differences between the classes were stated in these explanations. It is aimed to use methods, techniques and strategies such as reading aloud, silent reading, guessing, reading in groups, reading by asking questions, chorus of words, reading by heart, speed reading, summarizing, reading by glance, reading by taking notes, reading by marking, reading by discussing, reading critically. Thus, it is aimed to gain students reading as an active life skill. This situation shows that a skill-based approach has been adopted in the understanding of reading after 2000 in Turkey. With these skills to be gained in the reading education process, it is aimed to train individuals to be able to respond to the needs of the age.

Developments in Listening Education After 2000s

Listening is a basic language skill, which is one of the main elements of the communication process that enables the person to understand the content they listen/watch. Listening, unlike hearing, is a process that includes the selection, perception and evaluation of the sounds coming to the ear of the individual (Yalçın, 2012). Listening is the task of making sense of the messages conveyed through sounds (Richard, 2008). In the listening process, the individual performs some cognitive activities such as choosing to make sense of what is heard, using prior knowledge, organizing, and mental structuring (Güneş, 2007). At this point, listening is a language skill with both physical and cognitive dimensions. Listening has been seen as a neglected language skill in the historical process in Turkey as it is in the world (Çifçi, 2001). On the other hand, after the 2000s, with the adoption of the modern education approach, listening has taken its place in Turkish Language Curriculum as a basic skill area. After this process, there have been important developments in the field of listening, both in educational environments and in academic studies.

After 2000, subjects such as listening strategies (Doğan & Erdem, 2017; Fidan, 2019; Kurudayıoğlu & Kiraz, 2020a; Atalay & Melanlıoğlu, 2016); listening anxiety (Ateş, 2018; Melanlıoğlu, 2013; Maden & Durukan, 2016); listening styles (Maden & Durukan, 2011; Kurudayıoğlu & Savaş, 2020; Karahan, 2016); attitude towards listening (Tayşi & Özbay, 2016; Ciğerci & Gültekin, 2019); critical listening (Çarkıt, 2019; Çarkıt & Altun, 2020; Kemiksiz, 2015); listening barriers (Aşılıoğlu, 2009; Dinçel, 2018; Çarkıt & Koçoğlu, 2021); listening types (Melanlıoğlu, 2011; Kaya, 2014) are emphasized and studied by researchers in the field of listening. This situation shows that the studies carried out in the field of listening in Turkey after 2000 are in parallel with the studies carried out in the international arena.

2019 Turkish Course Curriculum has addressed all levels from the 1st grade to the 8th grade in a holistic structure. In the program, listening education was handled with the

gains under the title of "listening/watching skill". At this point, listening education starts from the first grade. In the first grade, preparation for the first reading and writing is done by listening to the sounds met by the letters from natural and artificial sound sources. The aim here is to ensure that the source of the sound played is noticed by the student (MEB, 2019). Considering that listening is a skill that starts in the womb, it is seen as an appropriate decision to start language teaching at school with listening education. In addition, 20 of the 32 texts required to be included in the 1st grade Turkish textbook are expected to be listening texts. In the Turkish textbooks of other classes, it is required to include 3 reading and 1 listening texts in each theme. In this way, it is aimed that the students acquire listening achievements with the practices they will carry out with active participation in the classrooms. Today, in Turkish lessons, it is aimed to make students good listeners in daily life by giving them an effective listening skill. Thus, it is expected that the number of individuals who listen, speak and try to overcome these problems through communication in the face of problems in society will increase.

Developments in Writing Education After 2000s

Considering the definitions of writing, one of the four basic language skills, in the literature, writing is the expression of feelings, thoughts, desires and events with certain symbols in accordance with certain rules according to Özbay (2006). According to Şengül (2011), writing is the transfer of information, thoughts, life experiences, emotions, dreams in any subject into writing as a result of mental processes, in accordance with the rules of language and in a certain order and integrity. When the definitions are analysed, it can be easily stated that the writing skill does not consist of a mechanical transfer between the brain and the hands. The student starts his/her writing training with the guidance of the teacher. Therefore, writing is a language skill that requires a certain level of training (Carkıt & Karaduz, 2015).

With the adoption of the constructivist education approach in Turkey after 2000, writing skill is defined as a process of setting the structured information down in writing in the brain (MEB, 2005). Contemporary educational approaches have brought to the forefront methods and techniques such as descriptive, interrogative, narrative, persuasive, comparative, collaborative and note-taking in writing traning. As in the countries where contemporary educational approaches are applied, researchers have conducted many studies that reveal the importance of affective factors in writing training in Turkey after 2000 (Baştuğ, 2015; Göçer, 2014; Kaya, 2013). It is seen that the subjects of attitude, anxiety and self-efficacy are intensively researched in the measurement of affective factors in writing skills (Bolat & Tekin, 2018; Tok & Potur, 2015).

In writing training studies after 2005, when radical changes were made in the field of Turkish education in line with contemporary education approaches, the result-oriented approach was switched to process-based approaches. Among the process-based learning and writing models, the 4+1 Planned Writing and Evaluation Model (Karatay & Aksu,

2017; Öztürk & Alan 2019) and the 6+1 Analytical Writing and Evaluation Model (Kaldırım, 2014; Özkara, 2007; Özdemir & Özbay, 2016) have been came to the forefront. Creative writing (Kaya, 2013; Temizkan, 2010; Özdemir & Çevik 2018) and critical writing (Karabay, 2015; Potur, 2014; Söylemez, 2015) are seen as writing areas where researchers concentrate. These areas are in the same trend as the research on writing training in the world.

The period of compulsory education in Turkey has been increased from 8 to 12 years with the amendment of the law made in 2012. In this context, the courses and course hours in the classrooms have been changed, and the application of field-based elective courses has been introduced in addition to the compulsory courses. The Authorship and Writing Skills course, which is among the elective courses brought in the field of Turkish, has given a new impulse to writing training. This is a very important development in terms of teaching writing skills in depth and gaining writing skills (Çarkıt & Karadüz, 2015).

Developments in Speeking Education After 2000s

Speeking as a broad concept, is a skill that includes concepts that have close relationships with each other, such as sound, pronunciation, narration, understanding, agreement, and communication (Kurudayıoğlu, 2003). Speeking is the expression skill that individuals most often use to express themselves in everyday communication (Özbay, 2003). In the Turkish Language Course Curriculum prior to 2000, Speeking education took place in Turkish education with superficial target behaviors. The weight given to speeking education was insufficient against the weight of speeking in communication (Eyüp, 2008). In the 2005 Primary Turkish Language Course Curriculum, this issue was given more importance and many measurable and concrete achievements for direct speeking education were included. This program has covered speaking skill in detail under the title of "Basic Language Skills". In the 2005 Turkish Course Curriculum, the mental dimension of speeking was taken into consideration. For this purpose, in the speeking activity examples in the program; Studies that develop mental skills such as benefiting from knowledge, various visual and auditory materials, presenting thoughts in a logical flow and integrity, making comparisons, establishing cause-effect relationships, classification, evaluation, and summarization are included (MEB, 2005). There is a very wide range of methods and techniques in speeking education. In 2005 Turkish Course Curriculum, ten methods and techniques are suggested, including persuasion, critical speaking, engaged speaking, discussion, empathically speaking, guided speaking, speaking by choosing from the pool of words and concepts, free speech, creative speaking, memorizing technique. These methods and techniques have been continued to be used in the 2019 Turkish Course Curriculum. Accordingly, at the end of eight years of education, students are expected to prefer Turkish words in their speech, to be able to make impromptu speeches, to use words in accordance with their meanings, and to act with a strategy suitable for their speech purposes.

The proportion of academic studies conducted in the field of speeking education in Turkey is lower than studies conducted in other language skills (Varışoğlu, et al.; 2013). On the other hand, studies in the field of verbal skills have been increasing since 2000 (Alver & Taştemir, 2017). Considering the studies conducted in speeking education in Turkey, studies aimed at improving speeking skills (Aykaç & Çetinkaya, 2013; Doğan, 2009; Gedik & Orhan, 2014) and impromptu speeking strategies (Aydın & Canatan, 2015; Kurudayıoğlu & Kiraz, 2020b; Sağlam & Doğan, 2013) stand out.

Developments in Grammar Education After 2000s

Grammar can be defined as the branch of science that examines the rules of the language regarding the sound, word, sentence and meaning features, and determines the rules related to them. (Dolunay, 2010). Grammar examines the elements that make up the language, namely sounds, syllables, words and sentences in terms of structure, type, task, functioning and meaning characteristics. Since grammar is a branch of science that examines language with all its aspects, it concerns all individuals who speak that language. As a matter of fact, grammar rules are of great importance in acquiring the basic skills of a language and using these skills in a functional way (Göçer, 2008). After an individual begins to understand and speak his native language, he/she begins to perceive the grammatical structure of the language (Erdem & Çelik, 2011). Knowing the native language of the individual is possible by being aware of the language systems that make up that language. The whole set of structural and functional rules that make up a language is hidden in its grammatical structure. That is why the mastery of a person's native language means that he/she has mastered its grammatical structure. However, in order for a person to fully master his/her native language, he/she must internalize also the grammar rules of that language.

For many years, the behavioral model has been effective in language education and especially in the teaching of grammar in Turkey (Onan, 2012). According to this model, the principles of stimulus-response -reinforcement-repetition were used in grammar teaching, and the method of memorizing grammar rules was often used by giving a strict grammar. This approach, which plays second fiddle in understanding and transferring the learned information to daily life, has led to the emergence of negative thoughts about grammar, and grammar lessons have been remembered as unlikable rules, dozens of definitions, terms and concepts that have to be memorized. This situation has led to the ignoring of the contribution of grammar to the development of other language skills, which is the most basic function. After the 2000s, along with the constructivist approach and contemporary educational concepts accepted in the world, grammar teaching was discussed in detail and the objectives and processes of grammar teaching were redefined (Güneş, 2007). Accordingly, a developmental and interactive perspective has been brought to grammar teaching, it has been emphasized that the student begins to learn the language and the rules of the language in interaction with his environment from the pre-school period, and the purpose of teaching grammar has also been discussed as developing language skills,

communication, understanding, interaction, functionality, mental skills.

With the 2005 Turkish Language Course Curriculum in Turkey, it was aimed to implicate grammar rules through various activities instead of memorizing them, and to use the language rules learned in schools in functionally language-based communication environments. The same understanding was continued in the following programs as well. In this context, it has been aimed to contribute to the development of students ' reading, listening, speaking, writing skills of the language rules learned with constructivist grammar understanding. Grammar has been accepted as a part of teaching in the development of language skills. Accordingly, the process, not the result, has gained importance in grammar teaching.

After the 2000s, in the field of grammar, subjects such as constructivist approach to Grammar teaching (Güneş, 2013; Özdemir, et al., 2017); functional grammar teaching (İşcan, 2007); text-based grammar teaching (Çeçen & Aytaş, 2008); visual-based grammar teaching (Ulutaş & Batur, 2015); grammar teaching with concept maps (Öztürk & Ömeroğlu, 2015) are seen as the main ones emphasized and studied by researchers. This situation shows that the studies conducted in the field of grammar in Turkey after 2000 are in parallel with the studies conducted in the international arena.

Developments in Primary Literacy Education After 2000s

The structural order in the language basis is given to the students with the Primary Literacy Education. The student gradually acquires skills such as understanding, questioning and evaluating the environment with the language he/she learned by acquiring the basic features of the sound, syllable, word and sentence structures of the language. Failures in the primary literacy teaching cause major deficiencies in the language schemas that form in the child's mind. For this reason, as in all language education, the primary literacy teachingis of great importance in Turkish language education. There are many methods for primary literacy teaching. Until the 2000s, students were learning first reading and writing with the analysis method starting from the sentence. In this way, which is called the analysis method, students first started to learn short sentences that they could understand deductively. After then, these sentences were divided into words, words into syllables, and syllables into sounds, and students were taught to read and write.

Behavioral approach was abandoned in Turkish education in 2005. A new Turkish Language Curriculum has been prepared by considering the constructivist approach, multiple intelligences, brain-based learning, student-centered education, education sensitive to individual differences, spiral, thematic and skill approach. It was stated in the program that the primary literacy method most suitable for these approaches and models was the Sound Based Sentence Method (MEB, 2005). In the Sound Based Sentence Method, the primary literacy process is started by giving the sounds divided into groups. The student advances the primary literacy process by starting to form syllables

from sounds, words from syllables and sentences from words. The student tries to form meaningful groups with the parts he/she has learned continuously until he/she creates a text, starting from the sounds he/she receives gradually (Akman & Aşkın, 2012). Here, it is seen that the Sound Based Sentence Method is compatible with the basic philosophy of the constructivist approach. In 2005 Turkish Language Teaching Curriculum, cursive and italic hand writing style was also adopted. It has been put forward that cursive and italic handwriting contributes to the mental development of the student and that this situation improves the student's attention, as it obliges the student to pay attention to letter connections and details while writing. (Duran & Akyol, 2010; Güneş, 2017; MEB, 2005).

In the process, the failures experienced in the implementation of the cursive italic method led to the need to make changes in this regard. While the Sound-Based Sentence Method application continues in the Turkish Course Curriculum prepared in 2018, it was decided that upright letters could be preferred in addition to cursive italic writing in the primary literacy teaching. A year later, in the 2019 Turkish Course Curriculum, this dilemma was ended and the primary literacy teaching in the whole country was taught with sans serif and upright letters without quotes. The provision of teaching with upright letters was positively welcomed by all teachers (Karaman & Yılar, 2020). Within the scope of the 2019 Turkish Language Curriculum, which is currently in effect, the primary literacy teaching is carried out through the Sound-Based Sentence Method and upright letters.

Developments in Teaching Turkish as a Foreign Language After 2000s

Throughout the ages, people have been in search of recognition of nations and cultures that are different from themselves. Today, the interaction between nations and cultures takes place very quickly with the opportunities brought by technology (Biçer, 2017). The first stage of getting to know a nation and culture begins with learning the language spoken by that nation. Learning a foreign language also means getting to know the culture that people who speak that language have created over the centuries. People learn a foreign language for many reasons such as education, business, daily life, communication with the others. Turkish is among the most widely spoken languages in the world (Uzun, 2012). Teaching Turkish as a foreign language is carried out in Turkey through Turkish Teaching Centers within universities, and in abroad through Yunus Emre Institutes and Turkish Maarif Foundation. The number of Turkish teaching centers within universities in Turkey has exceeded 100. Yunus Emre Institutes continue their activities in 49 different countries. The Turkish Maarif Foundation is active in 67 countries.

In recent years, the number of foreign students coming to Turkey for education has increased rapidly with the increase in the level of education in Turkey and the increase in the number of universities. In addition, the developments in the field of teaching Turkish as a foreign language have accelerated with the impact of the intense Syrian migration to Turkey since 2011. Teaching Turkish as a foreign language has taken its place in universities as a new branch of science. The number of universities providing postgraduate and PhD

in this field is increasing rapidly. While 29 postgraduate theses were made before 2000 on teaching Turkish as a foreign language, this number increased to 240 between 2000 and 2017. While grammar and book review studies have been mostly focused on in graduate theses (Büyükikiz, 2014; Türkben, 2018), material preparation and book reviews have been prominent research topics in published articles (Biçer, 2017).

Turkish educators are determinedly working to provide undergraduate education in the field of teaching Turkish as a foreign language. As a matter of fact, teaching Turkish as a foreign language is seen as a field with different dimensions than teaching Turkish as a native language. It is seen as a need to train trainers at the undergraduate level in this field. Teaching Turkish as a foreign language continues to develop at a geometrical pace with the interest in Turkish all over the world and the opportunities brought by the refugee problem in Turkey.

CONCLUSION

The influence of the behavioral approach in the field of Turkish language education was continued until the 2000s. After the 2000s, on the other hand, the adoption of the modern education approach in the Turkish education system has brought along some transformations in the field of Turkish education. In this context, subjects such as reading strategies, reading anxiety, reading motivation, reading habits, reading attitude, screen reading, critical reading, and reading difficulties have been the main subjects discussed by researchers in the field of reading training. In the curriculum, on the other hand, reading was defined as a language skill consisting of achievable achievements and it was tried to be gained by students with categorical achievements at the classroom level. Within this period, the field of listening training also appears as a field in which the subjects required by the understanding of modern education are investigated, just like in the field of reading training. Within this period, subjects such as listening strategies, listening anxiety, listening styles, listening attitudes, critical listening, listening barriers, listening types, have been the main subjects discussed by the researchers. In the curriculum, on the orher hand, listening was defined as a language skill consisting of achievable achievements and it was tried to be gained by students with categorical achievements at the classroom level. Activity-based practices are included in the textbooks in order to effectively gain students with reading and listening skills, which are called comprehension skills.

With the adoption of the constructivist approach in Turkey after 2000, the writing skill was seen as the process of setting down the structured information in writing in the brain. With the contemporary educational approaches, methods and techniques such as descriptive, interrogative, narrative, persuasive, comparative, collaborative and note-taking have come to the forefront in writing education. In this context, researchers have conducted many studies to reveal the importance of affective factors in writing training. Accordingly, attitude, anxiety and self-efficacy have been the subjects that have been extensively researched in the measurement of affective factors in writing skills. In curricula, on the other hand, writing was defined as a language skill consisting of achievable gains and it was tried to be gained by students with categorical achievements at the classroom level. In this context, process-based writing practices are included in the textbooks. Within this period, the proportion of academic studies conducted in the field of speaking traning in Turkey is lower than the studies conducted in other language skills. On the other hand, studies in the field of speaking skills have been increasing since 2000. Considering the studies conducted in speaking traning in Turkey, studies aimed at improving speaking skills and impromptu speaking strategies come to the forefront. In Turkish Language Curriculum before 2000, speaking education took place with superficial target behaviors. In this context, the weight given to speaking traning was insufficient against the weight of speaking in communication. The field of speaking traning was given more importance in the Turkish Language Curriculum after the year 2000, which was carried out in line with the contemporary educational understandings. In these programs, speaking was defined as a language skill consisting of achievable achievements and it was tried to be gained by

students with categorical achievements at the classroom level. Activity-based practices are included in the textbooks in order to gain effective writing and speaking skills, which are called narrative skills, to students.

With the curricula made in line with the contemporary education approaches adopted in Turkey after the 2000s, it is aimed to implicate grammar rules through various activities instead of memorizing them, and to use the language rules learned in schools in functionally language-based communication environments. According to this understanding, which is called the constructivist grammar approach, it is aimed that the language rules learned is contribute to the development of students' reading, listening, speaking and writing skills. Hereunder, grammar is accepted as a part of teaching in the development of language skills, and process and text-based grammar applications are included in the textbooks. After the 2000s, the sound-based sentence method has been adopted in the primary literacy teaching. According to this method, the first reading and writing process is started by giving the sounds that are divided into groups. The student advances the primary literacy process by starting to form syllables from sounds, words from syllables and sentences from words.

After the 2000s, teaching Turkish as a foreign language has acquired a systematic structure. In this sense, teaching Turkish as a foreign language is provided by Turkish Teaching Centers within universities in Turkey; in abroad,on the other hand, through Yunus Emre Institutes and Turkish Maarif Foundation. The number of Turkish teaching centers within universities in Turkey has exceeded 100. Yunus Emre Institutes continue their activities in 49 different countries. The Turkish Maarif Foundation is active in 67 countries.

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Chapter 9

CONCEPT LEARNING AND TEACHING IN SOCIAL STUDIES

CONCEPT LEARNING AND TEACHING IN SOCIAL STUDIES

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INTRODUCTION

Social studies at primary and secondary school level is more than a collection of concepts and facts that children need to memorize, and in which two or more of the social science disciplines (geography, history, economics, political science/civics, etc.) are taught with an integrated approach (Farris, 2015: 22). It is the school curriculum where students learn to understand and interpret the world—people, places, cultures, systems and problems (Parker, 2010). Parker (2014: 26) defined the objectives of this course within the scope of social understanding and citizenship competence. Social understanding is knowledge of human life and societal needs derived from the social and human sciences. The citizenship competence, on the other hand, is the readiness and willingness to assume civic responsibilities. With this course, which focuses on human experiences, children are provided with democratic life skills such as evaluating information sources critically, recognizing different perspectives, and solving conflicts (Lee, 2008: 4). In addition to these skills, facts, concepts and generalizations that play a critical role in the use and development of knowledge (Jadallah, 2000) are also taught (Zarrillo, 2012). In this section, the conceptual dimension of the social studies content is discussed.

Concepts have an important place among the learning experiences of students in schools (Jadallah, 2000). Social studies concepts have meanings that develop with experience and learning (Parker, 2014). Due to its interdisciplinary nature, social studies deals with concepts and themes, ideas and beliefs, and people and places. Concepts enable the course content to be structured by establishing meaningful connections between different disciplines (Lee, 2008). Some educators advocate that the social studies curriculum should be developed around basic concepts that support meaningful learning (Brophy, 1990). The fact that social studies concepts suggest relationships between thoughts and events that allow students to make meaning of, classify and remember information (Singer, 2003: 81) reinforces this claim.

Social studies is a course given in the context of constructivist philosophy with an interdisciplinary approach at the primary school level in Turkey (4th, 5th, 6th and 7th grades). Concept teaching is considered very important in this course, which is structured within the framework of 7 learning areas in which interrelated knowledge, skills and

values can be seen as a whole (Ministry of National Education [MNE], 2018). The learning areas where social studies knowledge is built on basic concepts (Doğanay, 2008) are as follows (MNE, 2018):

- ✓ Individual and Society
- ✓ Culture and Heritage
- ✓ People, Places and Environments
- ✓ Science, Technology and Society
- ✓ Production, Distribution and Consumption
- ✓ Effective Citizenship
- ✓ Global Connections

Constructivist learning approach suggests that learning occurs as a result of students' associating their prior learning or their past experiences with new situations or experiences (Farris, 2015). Constructivism, which draws attention to the contributions of individuals to what is learned, requires providing rich teaching and learning experiences in order to create new knowledge (Schunk, 2012). In other words, new information is presented to facilitate students' understanding, contradictions are revealed to challenge existing concepts, and opportunities are provided for them to revise or correct conceptual understanding (Brooks & Brooks, 1999). Teachers, who will prepare a supportive learning environment instead of lecture and responding to the students (Schunk, 2012), structure their lessons around basic concepts and present the curriculum moving from the whole to the parts (Brooks & Brooks, 1999). Brooks and Brooks (1999) considered the organization of learning within the framework of basic concepts as a critical dimension of constructivist pedagogy and emphasized its function as a springboard in the realization of concept acquisition.

What is Concept?

Concepts have been regarded by cognitive psychologists as basic thought units for many years (Machery, 2009; Malt, 2010). Due to the information processing principle of the cognitive system, each new object is not handled independently of previously encountered objects; instead, in terms of concepts, new objects are classified with old objects (Hahn & Chater, 1997). The concepts underlying all higher-level cognitive processes have therefore been among the central topics in cognitive science (Solomon, Medin, & Lynch, 1999; Akman, & Koçoglu, 2017).

Concepts as mental constructs are an organized form of knowledge about an object, event, action, quality or relationship (Klausmeier, 1992). They are of critical importance for perceiving, thinking about and remembering objects and events in the world (Smith & Medin, 1981). They also play a leading role in the construction of new knowledge. Indeed, the construction of knowledge begins with our observations of events or objects through existing concepts (Novak & Gowin, 1984). On the other hand, concepts allow us to go beyond the given information; in other words, when we assign an entity to a class

based on its perceived qualities, we can make inferences about some of its undetected qualities (Smith & Medin, 1981).

In the relevant literature, concepts are grouped according to whether they are concrete or abstract (Senemoğlu, 2020), and whether they are perceptual, relational and associative concepts (Zentall, Galizio, & Critchfield, 2002). While concrete concepts (e.g. apple) are learned spontaneously from the first months of life, teaching is generally needed to learn abstract/defined concepts (e.g. revolution) (Senemoğlu, 2020). The main determinants of the distinction expressed by Zentall et al. (2002) are that stimuli are grouped on the basis of shared physical features (perceptual concepts), relationships between features (relational concepts), or shared functions (associative concepts). Although concepts are grouped in different ways, they have some common features. Ülgen (2004: 108-116) lists the characteristics of the concepts as follows:

1. Perceived properties of concepts may vary from individual to individual.
2. The concept has an original (prototype).
3. Some properties of concepts can sometimes be members of more than one concept.
4. Concepts consist of properties of objects and events that can be observed both directly and indirectly.
5. Concepts are multidimensional.
6. Concepts can be grouped within themselves according to certain criteria that fit their characteristics.
7. Concepts form a whole based on the interactions between them.
8. Concepts are related to language.
9. The properties of concepts are also concepts in themselves.

Meaning cannot be thought independently of concepts. Concepts help to define, explain and understand the qualities of a new object (Murphy, 2002). Moreover, they serve multiple functions such as identifying relationships (Wisniewski, 1995), establishing communication and supporting learning (Solomon et al., 1999; Wisniewski, 1995). Smith and Medin (1981) discuss the function of concepts within the framework of categorization and conceptual combination. According to them, concepts are tools for pattern recognition and responsible for expanding the conceptual structure by combining existing concepts with new ones.

Concept Learning

Although most students learn many concepts through observation and experience, concept learning is an integral part of any school curriculum (Markle, 1975, as cited in Prater, 1993: 51). Therefore, concept learning has been the main topic of interest for those who are interested in how effectively teaching is implemented in schools (Gagné, 1965). According to different definitions, concept learning involves being able to acquire

concepts (Machery, 2009), making decisions in situations such as what to name a certain object and what information is needed (Hunt, 1962), obtaining explanations that clarify the structure of generalizations (MacDonald & Witten, 1989: 500) and creating information in the mind by categorizing stimuli (Ülgen, 2004: 117).

Concept learning is fast and flexible because newly learned information is adapted to new situations with little effort (Zeithamova et al., 2019). Klausmeier (1975) suggests that concepts are learned in a sequential order from the concrete level to the identity level, then to the classificatory level and finally to the formal level. According to him, the concepts learned up to a certain level can be used to solve problems, generalize positive examples and distinguish non-examples, and grasp hierarchical relationships. Concept learning levels and cognitive operations performed at these levels are shown in Figure 1.

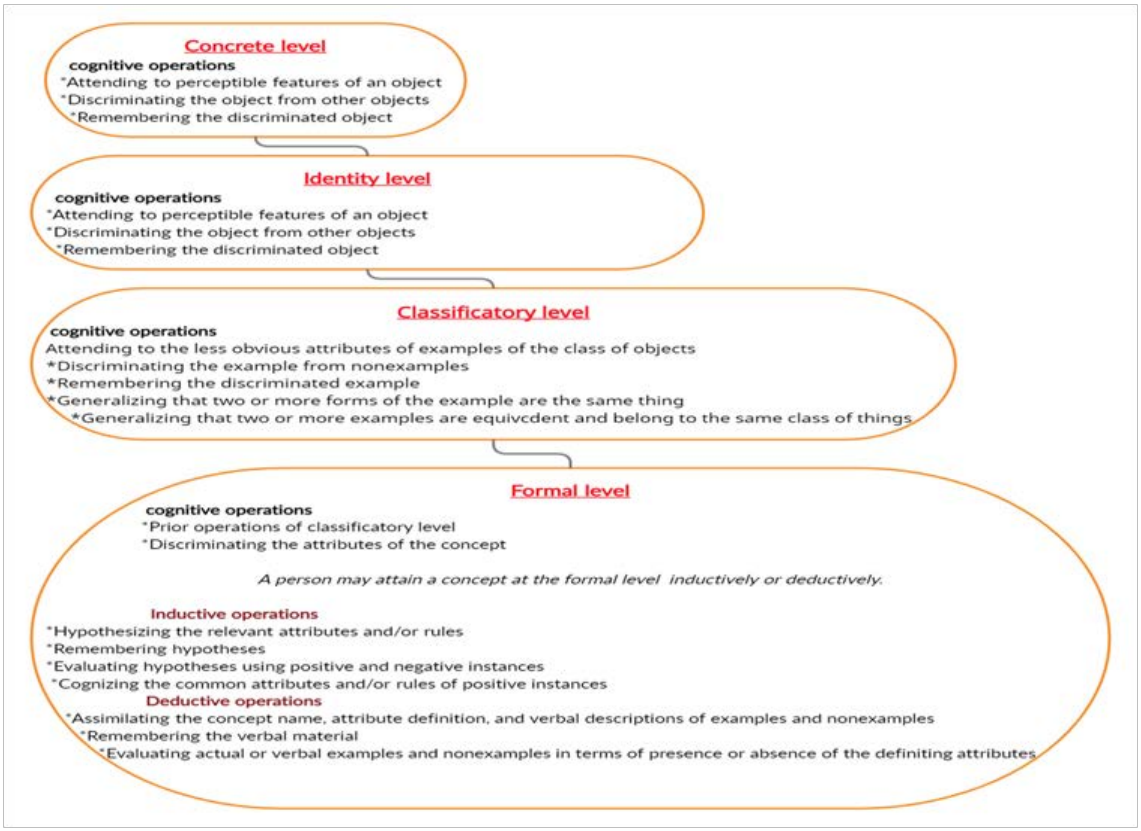

Figure 1. *Levels of concept learning and cognitive operations adapted from Klausmeier (1975)*

Learning sometimes requires great effort but at other times it takes place easily, but it is a very complex task (Driscoll, 2014). Although school learning is conceptual in nature (Gagné, 1965), students are mostly expected to learn concepts through the lecture method (Anderson & Kulhavy, 1972). However, in the learning process, the inadequacy of the students' prior knowledge about the concept to be learned, the confusion about concepts and the poor organization of the teaching environment make it difficult to learn the concept (Ülgen, 2004). In this regard, it is necessary to associate new information with existing concepts, and to ensure active participation of students in mental activities that create the

desired learning in cognitive structure (Kyriacou, 2009), because learning is successful not when students repeat what is taught, but when they can exhibit conceptual understanding (Özden, 2021). Klausmeier and Goodwin (1971, as cited in Marzano, 1985: 27-28) listed eight activities that should be followed in the concept learning process as follows:

1. To get a definition of the concept that states its defining attributes.
2. To identify the defining attributes of the concept and also some of its irrelevant attributes.
3. To identify examples and non-examples of the concept that will be used in the instruction.
4. To identity examples and non-examples of the concept that will be used in testing to ascertain whether the concept has been attained.
5. To identify the taxonomy of which the concept is a part and to indicate the supraordinate-coordinate-subordinate relations of the particular concept to other concepts.
6. To identify some of the principles in which the concept is used.
7. To identify kinds of problems whose solution will involve use of the concept, a principle, or both.
8. To identify the names of the attributes of the concept.

Students' learning of concepts or identifying and eliminating existing misconceptions depends largely on teaching practices (Ülgen, 2004). In order to help learners acquire new concepts and facilitate concept learning, strategies can be employed such as making clear the features defining the concept, offering various positive and negative instance about the concept simultaneously, and administering of assessment tasks in order to monitor and develop concept learning (Ormrod, 2012).

Concept Teaching

When it comes to attempts for effective social studies teaching, the question of "Is it possible to teach social studies without concepts?" may arise. According to Hertzberg (1981), the answer is clear: It is impossible to teach social studies without concepts. With concept teaching, students are intended to acquisition concepts by using teaching strategies that contribute to the formation of conceptual knowledge (Tennyson & Cocchiarella, 1986). Considering that our knowledge of the world is represented by concepts (Murphy, 2002), concept teaching seems to be a key point in the social studies course (National Council of the Social Studies [NCSS], 2017), which enables children to effectively understand an increasingly diverse world.

Concept teaching is necessary for concept learning (Higgins & Reid, 2017). The emphasis on teaching at the conceptual level in the learning process is based on a number of reasons. These reasons are that permanent learning is conceptual; knowledge can be grasped by applying it to new situations; prior knowledge affects subsequent learning, and that it is

not possible to learn all knowledge; consequently, gaining basic knowledge conceptually comes to the fore (Ayas, 2007: 108). Among these, especially looking at the last rationale from the perspective of social studies and asking the question "Should social studies teaching be structured according to the subjects in the textbooks or on the concepts that form the basis of the subjects?" seem to be useful. Insufficient time allocated for teaching the heavy social studies course content (Altay, 2020; Göksu, 2020; Koçoğlu & Egüz, 2019; Yılmaz & Tepebaş, 2011) prevents the achievement of the targeted acquisitions in the curriculum. Moreover, the fact that teachers act with the concern of being able to teach all the subjects in the curriculum makes it difficult for them to use activity-based teaching practices. However, teachers should plan and conduct their lessons according to the concepts that form the basis of the subjects instead of topic-based teaching. Introducing the concepts to their students and making the relationships between the concepts more clear and understandable via various visuals makes learning effective. It should be noted that concepts are key to understanding the social studies content (Russell, Waters, & Turner, 2014).

In concept teaching, two approaches are followed: expository teaching (from rule to example) and discovery teaching (from example to rule) (Erden & Akman, 2005). One of these approaches is expository teaching, which is used in cases where students do not have prior knowledge about the concept, whereas discovery teaching is used to facilitate learning in conditions where examples of concepts are known by students and their characteristics can be observed directly. In both approaches based on cognitive learning theories, students are expected to find similar and different aspects of the concept by providing plenty of examples to them (Erden & Akman, 2005: 203-204). In the literature, a 4-stage process is adopted for concept teaching (Tennyson & Park, 1980: 65-66):

1. The taxonomical structure of the content should be determined. The three levels of concept structure—superordinate, coordinate, and subordinate—should be analyzed with identification of critical and variable attributes.
2. A definition of the concept should be prepared in terms of the critical attributes, and a pool of examples should be prepared on the basis of critical and variable attributes.
3. The examples should be arranged in rational sets by appropriate manipulation of the attributes. Within a rational set, containing one example from each coordinate concept, the examples should have similar variable attributes.
4. The presentation order of the rational sets should be arranged according to the divergency and difficulty level among examples of the concept, and the presentation order of the examples within rational sets should be decided according to updated information about the learner's knowledge state.

Graphic Organizers

Teachers want their students to develop deep comprehension in learning social studies concepts (Gieselmann, 2008). Graphic organizers are ideal tools for teaching social studies terms at all grade levels (Gallavan & Kottler, 2007) and difficult concepts in printed materials such as textbooks, workbooks, and exercise books (Gieselmann, 2008). Graphic organizers, which are rooted in schema theory, help present new information to students and review previous lessons (Dye, 2000).

Schema theory, which is frequently used to explain the effectiveness of graphic organizers (Dunston, 1991: 58), is essentially an information processing model (Augoustinos & Innes, 1990) and argues that information is stored in the long-term memory in schemas that provide a structure for making sense of new information (Slavin, 2006: 191). According to this theory, which states that new information should be associated with previous information, teachers provide a supportive tool for students to have prior knowledge about the concept and to establish the necessary connections between what is taught and prior knowledge (Dye, 2000: 72). Graphic organizers are excellent tools that provide organizational structure for the presentation of information, i.e., organizing the information to be learned and relating it to the known (Dunston, 1991: 59).

Graphic organizers are effective strategies for organizing concepts and demonstrating how they are related to each other (Irwin-DeVitis & Pease, 1995: 57). Common examples of organizers are semantic maps, semantic feature analysis, cognitive maps, story maps, framed outlines and Venn diagrams (Kim, Vaughn, Wanzek, & Wei, 2004). As teaching-learning tools, graphic organizers can be used in curriculum planning and development, supporting understanding in learning new material, improving students' learning skills and evaluating their learning (McKnight, 2010). Offering graphic organizers to students helps to develop critical thinking and alleviate cognitive demands (Singleton & Filce, 2015).

The use of graphic organizers in social studies is a popular research topic. Research has revealed the effect of graphic organizers on understanding the complex topics presented in the social studies curriculum (Mann, 2014), on students' social studies academic achievement (Akbaş & Toros, 2016; Akyol Gök, 2014; Altıntaş & Altıntaş, 2008; Bektaş Öztaşkıran, 2014; Çolak, 2010; Dönmez, Yazıcı, & Sabancı, 2007; Gürgil, 2020; Kan, 2012; Karadeniz, Tangülü, & Melike, 2013) and their attitudes (Akyol Gök, 2014; Çolak, 2010; Governale, 1997; Kan, 2012). Organizers with visuals and verbal information (Bromley, 2008) provide students and teachers with the opportunity to monitor learning, receive continuous and accessible feedback, and discover the next steps for learning (Irwin-DeVitis & Pease, 1995: 59). Some of the graphic organizers that can be used in social studies learning environments are briefly mentioned below.

Concept map: Concept map are schematic demonstrations that represent relationships

between concepts in the form of propositions (Novak & Gowin, 1984). This tool, which reveals concepts and propositions, organizes information in a hierarchical structure in which subordinate concepts are gathered under superordinate concepts (Willerman & Mac Harg, 1991: 707). Providing valuable information about the content and organization of students' knowledge, concept map help teachers to identify and correct misconceptions (McClure, Sonak, & Suen, 1999: 491). They have multiple uses in the context of education in organizing and presenting information, and supporting and evaluating learning (Cañas et al., 2003).

Mind map: Mind map is a creative and effective note-taking technique that maps ideas (Buzan, 2005). The purpose of this technique, which allows students to imagine and explore the relationships between concepts, is to find creative associations between ideas (Davies, 2011). It helps individuals in many ways, including organizing and clarifying ideas, being creative, concentrating, problem solving, and remembering better (Buzan, 2004, 2005).

Cause-and-effect diagram: A cause-effect diagram, also known as an Ishikawa diagram (after its inventor) or a fishbone (after its appearance), is a visual representation of possible causes of a particular problem or situation (Oakland, 2003: 289). This diagram, which shows the relationship between cause and effect in a rational way, is used to gain new information about any problem, actively search for causes and conduct discussions (Ishikawa, 1976).

Story maps: Story maps are graphic representations of all or some of the elements that constitue a story and the relationships between them (Davis & McPherson, 1989: 232). These tools, which present a story visually, provide students with the opportunity to associate their prior experiences and knowledge with the text, to summarize their thoughts, and for teachers to evaluate what students have learned from the text (Reutzel, 1985). Versions of story maps include inferential story maps, locating information story maps, cause/effect story maps, and comparison/contrast story maps. (Davis & McPherson, 1989).

Semantic feature analysis: Semantic feature analysis are two-dimensional tables used to learn the descriptive and distinctive features of concepts (Ayas, 2007). When students participate in this type of activity, they activate prior knowledge and support it with examples, organize the superordinate and subordinate concepts according to their hierarchical relations, and use the processes of predicting, confirming and integrating (Anders & Bos, 1986: 615).

Learning and Teaching with Technologies: Web 2.0

Until recently, technological classroom applications were limited to Web 1.0 tools that included movies, television, projections, and radios, which lacked interaction and

collaboration (Schunk, 2012), whereas today, Web 2.0 tools that encourage free exchange of information and ideas and large-scale collaboration among different user groups (eg, blogs, wikis, podcasts, skype, etc) provide valuable educational insights (Crane, 2012). This represents a shift from a paradigm in which a vast majority of users act only as content consumers to a more active engagement, creation and sharing (Crook & Harrison, 2008). Web 2.0, also called the read/write web, offers users a variety of ways to personalize their online presence (Hall, 2009).

The understanding of putting students at the center of the learning process, instead of teacher-centered learning, refers to a transition from the role of teachers who possess knowledge for a specific purpose and transfer it, to the role of the students who cooperate with each other and manage their own learning processes through active participation (Jahnke & Koch, 2009). The use of Web tools helps this constructivist understanding, which encourages students to contemplate what they know about a subject, seek new information, solve authentic problems, and interact with others to develop understanding (Solomon & Schrum, 2007). Although Web 2.0 tools are not specifically designed for educational purposes, they have had a positive impact on authentic learning and autonomy in learning by providing unique environments to change the teaching process and the nature of learning experiences (Konstantinidis, Theodosiadou, & Pappos, 2013).

Web 2.0 technologies, where any participant can be a content creator (Cormode & Krishnamurthy, 2008), allow sharing of images, audios and videos, and creation and maintenance of social networks (Bennett, Bishop, Dalgarno, Waycott, & Kennedy, 2012). Thousands of Web 2.0 applications with learning and teaching potential for students and teachers have the potential to improve education. For example, these tools provide a number of benefits such as customizing learning content, settting the learning pace, establishing contact with other students having similar profiles, instant chatting experience with the tutor (Magolda & Platt, 2009), enhancing learning experiences, participating actively in learning activities, having the opportunity to innovate and create in a collaborative multimedia environment, and forming learning communities and joining these communities (Yuen, Yaoyuneyong, & Yuen, 2011: 110). Designed to improve collaboration and sharing, Web 2.0 tools can also be used as alternative teaching applications in concept teaching: Creately (https://creately.com), Lucidchart (https://www.lucidchart.com) and Cacoo for diagramming. (https://cacoo.com); and MindMeister (https://www.mindmeister.com), Bubbl.us (https://bubbl.us), MindMup (https://www.mindmup.com), Mindomo (https: //www.mindomo.com) and Slatebox (https://slatebox.com), Ayoa (https://www.ayoa.com) for mind mapping. Below are brief description about one of the specified diagram creation and mind mapping applications and an example of a graphic organizer from the field of social studies.

Creately: This application, which is used to create diagrams in cooperation, provides users the opportunity to create flowchart, mind maps, concept maps, network diagrams, timeline, cause-and-effect diagram, story maps, Venn diagrams (https://creately.com). An

example of a concept map prepared using the Creately application is presented in Figure 2 below.

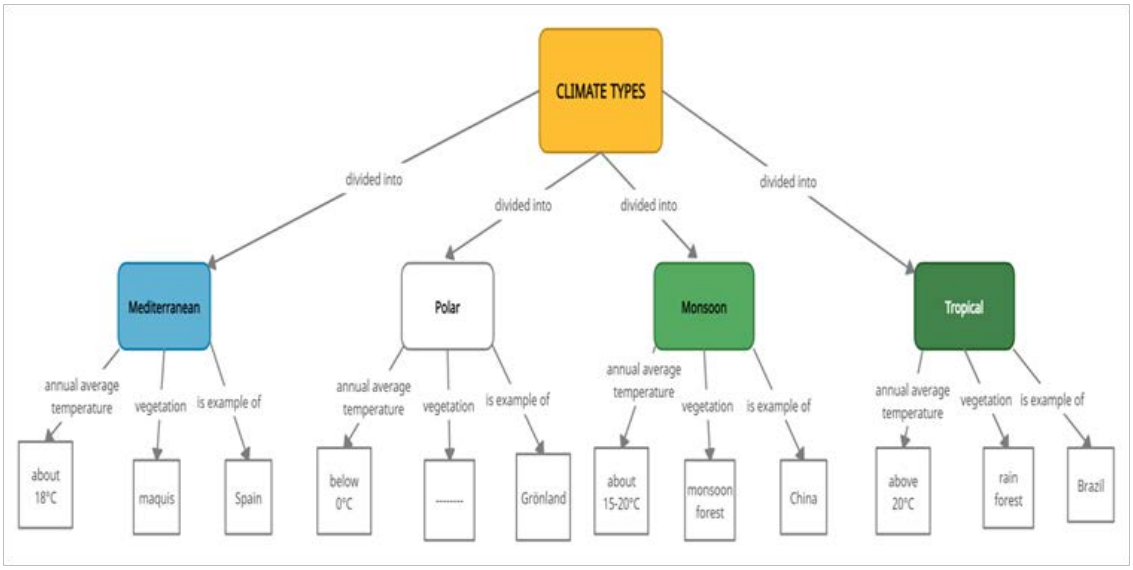

Figure 2. *An example of concept map on climate types*

Ayoa: Ayoa is a digital mind map tool that allows users to collaboratively create mind maps and share them with others. It is a flexible application that allows you to work online and offline, wherever and whenever you want (https://www.ayoa.com). An example of a mind map prepared using the Ayoa application is presented in Figure 3 below.

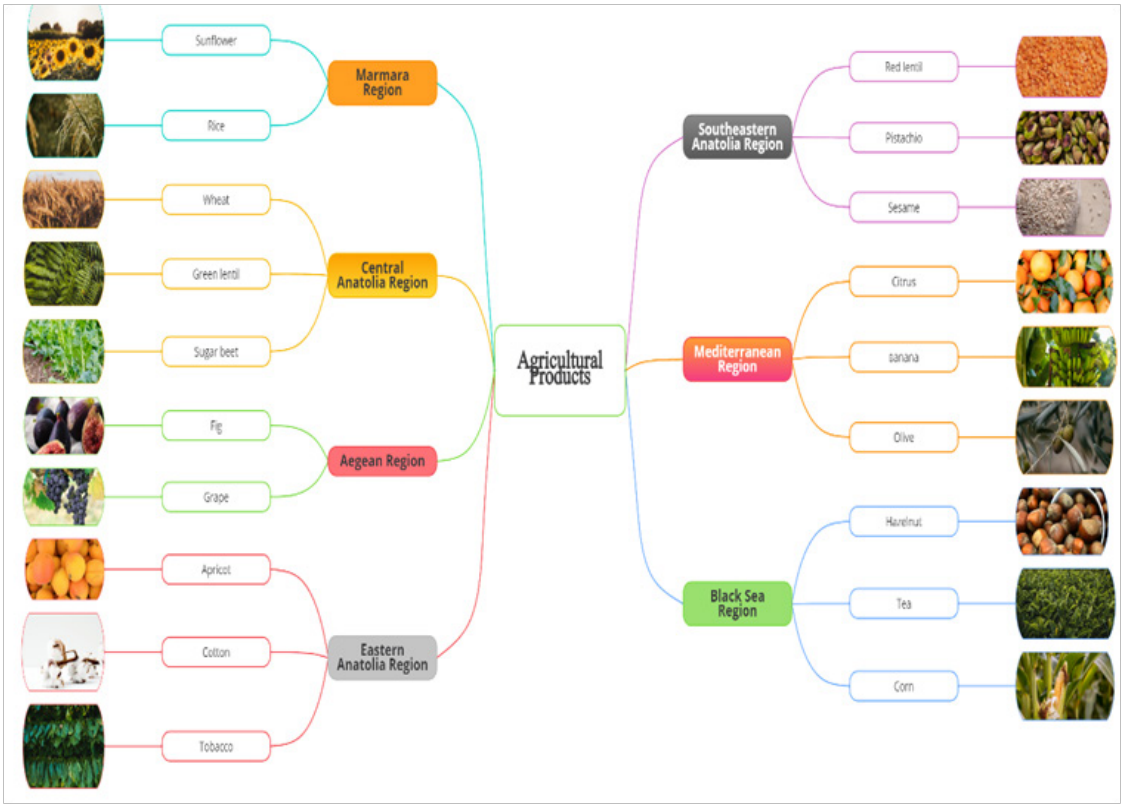

Figure 3. *An example of mind map on agricultural products*

CONCLUSION

Technology is increasingly used in social studies teaching (Farris, 2015). Web 2.0 tools, which are among these technologies and have become popular in students' daily lives (Bennett et al., 2012), enable students and educators to cooperate and interact (Tunks, 2012). In addition, when used effectively, they enhance learner motivation and autonomy by involving students in more participatory learning, and encourage extended learning (Crook & Harrison, 2008).

Technological tools, which also the focus of attention in concept teaching (Prater, 1993), can play an important role in effectively transferring of social studies content to students. Being considered a critical element of educational activities such as blogs, wikis and multimedia applications, Web 2.0 tools (Williams & Chinn, 2009) can contribute to meaningful learning by transforming into an environment where graphic organizers (eg, concept map, cause-and-effect diagram, mind map) used in concept learning are developed and shared (eg, Creately, Lucidchart, Slatebox). The point that should not be overlooked here is that while the dominant role of teachers in teaching concepts is undeniable, when students create graphic organizers individually or in teams (which is the expectation), they will develop the practice of organizing information visually beyond the classroom walls and proceed from surface learning to deep learning (Fisher & Frey, 2018: 765).

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Chapter 10

OUT-OF-SCHOOL LEARNING ENVIRONMENTS IN THE CONTEXT OF SOCIAL STUDIES TEACHING (The Field Trip Method)

OUT-OF-SCHOOL LEARNING ENVIRONMENTS IN THE CONTEXT OF SOCIAL STUDIES TEACHING

(The Field Trip Method)

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"The art of teaching is the art of assisting discovery."
Marc Van Doren

INTRODUCTION

The socio-cultural changes experienced in today's world, rapidly developing communication systems and the developments in science and technology all inevitably affect "education". Thus, it has become a necessity for each and every country and society to adapt to these new conditions. In this regard, in Turkey, in addition to the global developments, it was the political, social and cultural changes that took place within the country since the proclamation of the Republic that shaped the "national education policies".

Ministry of National Education of Turkey has initiated the works to renew and update the curriculum as of 2005 in line with the necessities of the time, and in this way the global and social developments were reflected in the curriculum. In the mean time, in line with the debates carried out to give a new direction to the education system, the necessary revisions are continously being made in order to increase the quality and efficiency of education and to meet the changing needs of the society and individuals (Gelen& Beyazıt, 2007). Accordingly, additional curricular works based on the development works of 2005 were initiated as of 2016-2017 academic year in order to comprehensively update, review, revise and supplement the entire curricula. Consequentially, it was decided to extend the implementation of the new curriculum, which was implemented only in the 4th and 5th grade levels during the 2017-2018 academic year, to all grades in the elementary and middle school levels as of the 2018-2019 academic year (TTKB, 2017).

Ministry of National Education Board of Education (2005) set forth the principles followed in the development of the new curriculum as follows; "Lessons shall not be based on rote learning, shall be aligned with the necessities of daily life, fun and usable; teachers' shall make use of guiding activities instead of relaying information directly;

alternative assessment approaches based on constructivist learning approach shall be used in assessment and evaluation; integration with the world shall be ensured and in this regard, European Union standards shall be taken into account in particular; and critical thinking, creative thinking, communication, research, inquiry, problem solving, information technology and entrepreneurial skills shall be developed".

Working life in today's world demands individuals who question and criticize, who are creative and entrepreneurial, and who exhibit positive communication skills. Nevertheless, it is not likely for individuals who are raised with a "teacher-centered" approach in the education process to acquire these skills necessitated by the 21st century.

Effective learning necessitates active participation in learning activities and making connections to daily life through hands-on learning. The changes in the methods and techniques used in educational activities led to changes in the areas where learning activities are carried out, which are no longer limited to classroom environments (Laçin&Şimşek). In view of the foregoing, in this section, several relevant phenomena, i.e. "out-of-school learning", "out-of-school learning in social studies teaching" and "field trip method" are discussed in terms of providing content related to daily life and ensuring learning by experience.

Definition, Scope and Importance of Out-of-School Learning

Learning is a phenomenon that takes place at every stage of our life. As the interest in "learning" in the sphere of education has increased, so has the number of studies conducted to explore different learning methods and evaluate the effectiveness of these methods. The conditions of today's world lead individuals to actively learn at every moment of life and develop the necessary skills rather than just to acquire knowledge, and it is a known fact that individuals learn from the experience gained while exploring environment, culture, society and the world.

Learning is a process in which individuals associate the new knowledge with the knowledge they have gained previously. Learning is divided into two categories as formal and informal learning according to the environment in which it takes place. *Formal learning* aims that the individuals gain certain knowledge and skills in line with specific goals within a plan and program in specialized institutions ranging from pre-school to university (Laçin Şimşek, 2020; Salmi, 1993; Tösten, 2020). Nevertheless, learning takes place not just in school environment but in all stages of life. To exemplify, an important part of learning takes place during daily life activities or while at home or at a park, visiting museums, and reviewing books and magazines. Such processes, in which individuals actively take part, exploring new things and enriching their experiences, are considered within the scope of informal learning (Tösten, 2020). Intrinsically, informal learning includes a wide array of activities which vary greatly. Informal learning environments allow the individuals to gain awareness and the skills related to life and society. Accordingly, learning can take place in

a circle of family or friends, while reading a book or newspaper, or watching television. Taking into consideration the time students spend outside of school, it is undeniable that a great deal of learning takes place in other environments.

Between formal learning and informal learning, there is also *non-formal learning.* The concept of non-formal learning emerged in the 1960s in line with the concept of "out of school learning" which was introduced to respond to newly emerging educational needs (La belle, 1982). Non-formal learning takes place in a planned and adaptable way in institutions or locations other than the institutions where formal education takes place (Esha, 2007; Akman, 2016). From this point of view, "out-of-school learning", which is the main theme of this section, is in fact related to non-formal learning.

Learning is the process that primarily takes place by experience, that is through interaction with cultural and social environment. An educational approach that considers the learning process to consist only of transferring knowledge and supervising learning rarely encourages learning. Information can be transformed into knowledge and become more permanent by experience only. On the other hand, in today's conditions, information quickly loses its validity, as new information is continuously produced replacing the existing information. In parallel, the importance of learning information is decreasing with each passing day, and at the same time, learning is no longer limited to classroom environment but extended to every stage of life (Fer, 2014).

Education researchers conduct numerous studies on the effects of different teaching methods, in search of ways to make learning more effective and permanent. Teachers make an effort to discover the interests and talents of their students, thereby to turn their lessons into fun experiences that are of interest to students and prompt their participation. At this point, "out-of-school learning" activities come to the forefront as indicated by the findings of relevant studies which emphasize that out-of-school environments should be utilized for educational purposes.

The primary objective of education is to ensure the individual, social and academic development of students, and schools are an indispensable element of the education process in that regard. Given the changing individual and social needs, increasing human mobility, environmental problems, technological developments, and emerging concepts such as inclusive education and out-of-school learning environments, it is inevitable for schools to undergo a transformation and turn into structures that can update themselves based on the necessities of the time (Yavuz, 2018). School is an institution that has appropriate interior and exterior space and equipment, which has relations with the society and uses all the opportunities provided by the society, cooperates with the family, carries out educational activities within the framework of a certain program, and does not limit learning and teaching to the physical boundaries of the school building (Balıkçı, 2020; Oktay, 2020). Demirel (2017) stated that learning shall take place through activities planned outside of school as well as inside the school. At this point, the idea of teaching

in out-of-school environments as well as in-school environment emerges. From a broader perspective, out-of-school learning also encompasses activities carried out within the premises of the school yet not in the classroom building and all other extracurricular activities.

It is a known fact that in the Turkish education system, educational activities are generally carried out in the school environment and classroom setting. This is not because the content necessitates the education to be carried out in the classroom, but due to the lack of efforts to make use of other options that can be carried out outside the school building.

It is very important to support the education carried out in the school environment and classroom setting with out-of-school teaching activities (Demir, 2007). Out-of-school learning has been addressed in the literature within the scope of different terms, such as "out-of-school/outside-of-school education/learning", outdoor or out of doors education/ learning", "out-of-class learning work" (Kuh, 1995; Şimşek & Kaymakçı, 2015). In point of fact, out-of-school learning is not a new concept, and there have been many scholars over the centuries who have affirmed that experiences in different learning environments contribute to learning (Davies ve Hamilton, 2018). Among them are; Comenius, one of the pedagogues of the 17th century; Rousseau, the advocate of naturalistic education of the Enlightenment; Pestalozzi, one of the representatives of the age of Humanism; Froebel, who is accepted as the father of pre-school education; and Dewey, one of the pioneers of pragmatism, have addressed the "out-of-school learning". Consequentially, the theoretical framework of "out-of-school learning" has been defined as the integration of school and environment in the 18th and 19th centuries (Tokcan, 2015; Topçu, 2017).

Out-of-school learning is defined as the education that takes place in the institutions and environments outside the school building but during the class hours and within scope of the curriculum (Salmi, 1993). In this sense, out-of-school learning processes serve to attain the acquisitions targeted by the course through the activities carried out in parallel with the curriculum.

Out-of-school learning has more potential to support children's cognitive and physical development, communicative, social and emotional development, socio-cultural identity, levels of concentration and motivation to learn. Students are more likely to initiate interaction, engage in shared thinking and questioning during out-of-school learning activities (Davies ve Hamilton, 2018). Considering that the life experiences of students both in- and out-of-school have an impact on their academic success and on their place in society, the learning of students should take place not just in school, but also in out-of-school environments (Eshac, 2007; Yavuz Topaloğlu, 2016). As a reason, education carried out through teaching of theoretical or conceptual content in the classroom environment in schools usually does not go beyond the dimension of theoretical information, whereas education carried out through out-of-school learning helps students to establish a connection between the theoretical and practical information and to process

this information transforming raw information into processed knowledge.

Nichols (1982) listed the important features of curricular activities in out-of-school learning environments as follows (as cited in Katırcıoğlu, 2019);

- They are carried out outside the physical school building.
- Students participate in the activities first hand.
- They incorporate real objects.
- Lessons are linked to real events.
- They appeal to many senses.
- They encourage student participation as they are fun and engaging.

The results of the relevant studies available in the literature revealed that out-of-school learning experiences support students' cognitive, academic, and personal development (Kuh, 1995; Strauss & Terenzini, 2007). Nevertheless, there is an ongoing need for further studies on out-of-school learning, considering that one of the main objectives of education is "to enable students to learn on their own outside of school". In this regard, students should be able to learn new knowledge and skills about subjects not taught in the school curriculum and make well-reasoned decisions about choosing a career, participating in politics, purchasing products, and the like. Besides, the ability to acquire new knowledge and skills related to one's hobbies can provide a lifelong source of satisfaction. Learning in a wide array of contexts will not be possible unless the individual learns how to learn by him/herself effectively (Bergin, 1996). In today's world, there is a growing need for individuals who know how to access information, who can distinguish the accurate information from the inaccurate information, and who know how to make use of the accurate information. In this context, education should be implemented in environments closest to the real environments in order to raise individuals who can read and understand, make use of the information, produce and create (Fer, 2014; Yıldırım, 2018).

The time students spend on new technologies resulted in a decrease in the time they spend to explore the local environment outside their home. This situation, combined with the concerns about the safety and protection of the child, has made the parents to adopt a more risk-aversive attitude with regards to the activities they allow their children to do. The solution to this problem is that schools should offer more out-of-school learning activities (Power et al., 2009). Learning outside of school allows the use of local resources and community-focused content, and students can develop their own unique learning experiences. Ensuring that the students learn by experience, through inquiry and hands-on activities will undoubtedly make education easier and permanent (Bamberger & Tal, 2006; Tösten, 2020). Not limiting learning to the classroom environment through making use of out-of-school learning activities will also enable students to interact with their surroundings in addition to supporting the education given in the classroom setting.

Bunting (2006) stated that out-of-school education consists of three dimensions, *which*

are: extension, content and teaching methodolgy.

Extension is the process of extending the structured learning activities by changing the setting where the learning takes place to natural environments that are more relevant to the subject being taught. To this end, students leave the classroom setting to thoroughly research any curricular topic. The second dimension of the out-of-school education is the content or the subject taught.

Content covers topics such as natural environments, the relation between humans and environment, skills to be used in activities carried out outside the school, and responsibilities to be fulfilled as an individual and as a society.

Teaching methodology refers to the methods and techniques that are to be used in out-of-school activities to teach various subjects and concepts, and to emphasize any connection there is. Out-of-school activities, as a method of teaching, incorporate the cognitive, affective and psychomotor domains of learning. Additionally, students gain multidimensional learning abilities in out-of-school environments such as collaborative learning, the ability to correct incomplete and incorrect concepts, express their feelings and thoughts freely, and bring a different perspective to events and situations (Öztürk, 2019).

Out-of-School Learning Environments

Out-of-school learning environments are defined as environments, where the students are allowed to interact with the environment first hand, in order to enable them to establish an experiential connection in relation to the subject being taught (Bakioğlu, 2020). In another definition, out-of-school learning environments are defined as the institutions and environments other than the school building, where educational activities are carried out in a planned manner in parallel with the curriculum to attain specific acquisitions thereof (Salmi, 1993).

Out-of-school learning environments cover a wide range of spatial areas and activities, such as (Fidan, 2012, as cited in Saraç, 2017)

- Field trips and field studies.
- Excursions and visits to social, cultural, industrial and scientific places, including but not limited to the museums in general and natural history museums and science and technology museums in specific as well as planetariums, botanical gardens, zoos, meteorology stations, water treatment plants, dams, industrial establishments, etc.
- Virtual reality applications, nature trainings, environmental club activities.
- Assignments and projects directly related to the out-of-school environment.
- Sporting events.

- Social, cultural and scientific programs, including but not limited to exhibitions, meetings, congresses, panels, conferences and symposiums.
- Spatial applications intended for lifelong learning.

Education and training environments serve the permanence of learning provided that they are used effectively as areas where learning takes place. The adoption of the constructivist approach in the curriculum has increased the importance of activities carried out in out-of-school environments (Malkoç & Kaya, 2015). Out-of-school learning environments that support the content and acquisitions of the courses offer a great opportunity in that regard. In this context, a well-planned out-of-school teaching activity will enable students to construct their own learning and relate to reality. Therefore, activities carried out in out-of-school learning environments should be organized in line with specific objectives and acquisitions of the course.

Social Studies Teaching in Turkey

Prior to addressing out-of-school learning environments in the context of social studies teaching, it would be useful to briefly explain social studies teaching in Turkey in terms of its definition, background, current state, and the associated learning approaches. In Turkey, social studies course is deemed as one of the courses that incorporates out-of-school teaching. According to the definition provided in the education program prepared by the Ministry of National Education in 2004; "Social studies is a primary education course that reflects social sciences and civics subjects such as history, geography, economics, sociology, anthropology, psychology, philosophy, political science and law in order to help individuals realize their social existence, that combines learning fields under a unit or theme, that addresses the interaction of the individuals with the social and physical environment in the context of the past, present and future, and which is formed based on a collective teaching approach." (MEB, 2005, p. 46).

A review of the history of the Social Studies course in Turkey reveals that the content and structure of the course has changed from time to time. Geography and History, as the courses that would form the basis of social studies course in the later period, were included in the 1924 elementary school curriculum, the first education program of the Republican period. In the draft 1962 elementary school curriculum, Geography, History and Citizenship courses were combined under the "Society and Country Studies" course. The title of the course was changed to "Social Studies" in the 1968 elementary school curriculum. In the 1973-1974 academic year, Social Studies course was also included in the middle school curriculum, and remained in the middle school curriculum until the coup of September 12th, 1980. After this date, Social Studies course was replaced by the National History and National Geography courses. Curriculum development studies in respect of Social Studies course, which started in 1998 taking into consideration the developments in the world, were completed in 2005 (Kaya, 2020; Öztürk, 2011).

Collective education approach was effectively utilized in the social studies course curriculum within the scope of the curriculum development studies carried out in 2005. The 2005 social studies curriculum was updated in 2017 in line with the collective education approach, and the new social studies curriculum was put into practice as updated in 2018.

In 2005, it was stated that the social studies curriculum needed to be arranged in a way that would allow students to learn the ways of accessing information and develop their problem-solving and decision-making skills. The new approaches used in the development of the social studies curriculum to that effect attracted attention. Social studies curriculum that was developed "promotes students to effectively participate in life, make the right decision, and solve problems, featuring constructivism with a supportive and developing approach, taking into account the value of knowledge and the existing experiences of the students". It was aimed with this new curriculum to adopt an understanding that is student-centered and which allows students to interact with the environment, by taking into account their own experiences and individual differences (MEB, 2005).

Social studies curriculum aims to provide students with skills such as critical thinking, problem solving, environmental literacy, using evidence, location analysis, observation, perception of space and collaboration (MEB, 2018a), yet teaching activities carried out in the classroom environment only will not be sufficient to provide students with these skills. As a matter of fact, "making use of out-of-school environments in social studies teaching" has been brought forward as one of the issues to be addressed in the implementation of the 2018 Social Studies Curriculum; and accordingly, it was emphasized that the activities to be organized can be held in a variety of locations from the immediate surroundings of the school such as the school garden to government offices, factories, exhibitions, archaeological excavation sites, workshops, museums and historical places (MEB, 2018a).

Out-of-School Learning in Social Studies Teaching

In terms of the learning and teaching processes, the social studies course curriculum was developed based on student-centered activities, in order to provide students with the desired knowledge, skills and values through activities (Özdemir, 2014). In this context, the approach adopted in the development of the social studies curriculum, which started to be implemented in 2005, has been the "constructivist approach". In this approach, "learning" is an active process, students gain affective skills that contribute to constructing knowledge in addition to learning by constructing new ideas based on their current and past knowledge (Erdamar-Koç & Demirel, 2008; Pagán, 2006).

Out-of-school learning activities provide a constructivist learning environment in terms of providing content related to real life in which the students also take part and ensure learning by experience. In today's rapidly changing world, teaching activities that do not give students the opportunity to construct knowledge will not be sufficient. In the learner-centered approach, appropriate learning environments are provided so that teaching

processes can take place in a positive way.

The social studies course was formed as a result of bringing together the subjects of social sciences and natural sciences with an interdisciplinary approach. For this reason, it will not be sufficient to carry out the learning activities mostly in the classroom setting, considering that the real resources for the subject to be taught are outside the classroom. Out-of-school learning environments can be divided into two categories: the natural environment and the social environment. The content of the social studies course includes acquisitions that concern both of the said categories (Altın & Demirtaş, 2014). Accordingly, real learning opportunities should be provided to the students through efficient planning in line with the targeted acquisitions of social studies teaching activities. It is important that the teachers understand that the outside environment is at the center of experiential learning and that it is important for the relational bond between them and their students (Foran, 2008).

There are several challenges to overcome in the teaching of the social studies course, the most important challenge being concretization of the abstract issues. The fact that the education system is based on exams and tests forces students to memorize rather than understand (Şanlı, 2018). Meaningful learning in the social studies course can only be achieved by elaborating the learning activities to be implemented within the scope of the course in a way that is related to life and meets the interests, needs and expectations of the students, considering that social studies course curriculum is a comprehensive curriculum that is based on verbal information (Tünkler, 2019).

Kincheloe (2001) attribute the problems experienced in social studies teaching to the limited experience of students in respect of values, the excessive adherence of teachers and students to the textbook, traditional teaching methods that restrict innovative practices, the alienation of teachers from the field of education, the fact that academic activities carried out to improve students cognitively are not reflected in practice, and the lack of public awareness about the importance of social studies (as cited in Foran, 2008). Teaching activities carried out only in the classroom setting would never be sufficient, taking into consideration the fact that social studies course aims to prepare students for social life. Various learning environments that can be used to attain the acquisitions set forth in the curriculum would provide the opportunity to implement out-of-school teaching activities in social studies teaching.

Various out-of-school environments have been cited in the literature in the context of social studies teaching (Akkuş & Meydan, 2013; Altın & Demirtaş, 2014; Öner, 2015; Öner & Öztürk, 2019; Şimşek, 2015; Tösten, 2020; Tuncel & Dolanbay, 2018), including nut not limited to historical places, i.e. ancient cities, ruins and historical buildings, historical martyrdoms, monuments and tombs, museums, geographical places, national parks, public institutions, private sector institutions, non-governmental organizations, and science centers.

Out-of-school learning and social studies are two concepts that are highly relevant, even more so than other subjects. Out-of-school learning in the context of social studies teaching is about making knowledge meaningful and experiential for the student as per innovative thinking education. Social studies teaching provides extremely convenient and various opportunities for out-of-school learning as it is a course created using an interdisciplinary approach and the primary acquisitions of which are providing students with individual and social life skills and creating awareness in students by having them adopt historical and cultural heritage.

Field Trip Method in Social Studies Teaching

Structure of the social studies course has changed in line with the change in the philosophy of education experienced in Turkey in 2005. This change in philosophy was also reflected in the curriculum updated in 2018, as it can be inferred from the skill-based teaching approach adopted in both curricula (Erdoğan, 2019). In the course of time, out-of-school environments have gained even more importance in terms of providing students with skills such as research, problem solving, critical thinking and inquiry. In parallel, it was emphasized in the 2023 Education Vision document (MEB, 2018b) published by the Ministry of National Education in 2018 that there will be more cooperation with science centers, museums, art centers and universities on the restructuring of primary and secondary schools. The field trip method was mentioned in the "Out of School Learning Environments Guide" (MEB, 2019) published by the Ministry of National Education within the scope of the 2023 Education Vision as one of the teaching methods to be utilized within the scope of out-of-school learning, as it is a method that provides students with first hand experience and appeals to many senses.

The field trip method, which can be applied at every grade level, is one of the primary methods that supports student-centered teaching approach in social studies teaching in elementary and middle schools. Social studies course was created with an interdisciplinary approach by making use of many disciplines that concern the individual, society and nature such as history, geography, law, economics, sociology, psychology, anthropology, etc., which is why the field trip method can be used to teach a good part of the social studies course content.

The field trip method includes visiting places where the events of relevance have taken place or still take place and making on-site observations and evaluations to make inferences about the events, in order to supplement the classroom work and make it more meaningful (Açıkgöz, 2006; Garipağaoğlu, 2001). We can define the field trip method as a teaching activity that is used to give the opportunity to students to get to know their immediate environment, to make sense of the knowledge they have gained at school by making a connection with real life, and to access the information first hand.

Observation, which is a component of the field trip method, is the meticulous and planned

evaluation of an event, object or fact to determine its qualities in order to achieve certain educational purposes (Çetin et al., 2010). Additionally, field trip includes visiting a natural or cultural place, experiencing events, phenomena, formations and objects through observation and acquiring knowledge first hand, in line with the objectives of the course and the targeted acquisitions of the curriculum. Importance of out-of-school education in today's world is increasing with each passing day, and given its nature and content, social studies course emerges as an appropriate course within the scope of which field trips can be organized to allow students to get connected both with nature and with the cultural and social environment.

Use of field trip method, which forms the basis of geographical research at the academic level, within the bounds of possibility in both elementary and middle school settings has proven to be beneficial. Observation method used within the scope of field trip emerges as one of the basic methods used in teaching social studies and geography, given that natural environment serves as a sort of laboratory in the teaching of geography subjects (Kızılçaoğlu, 2003). A number of subjects included in the Social Studies course, which was created with an interdisciplinary approach, are actually subjects of "geography". Geography comes to the fore when all human activities carried out in relation to the place the humans live are considered. The knowledge and ideas produced by other fields of social sciences take place within their own unique geographical spaces. Disciplines such as history, sociology, economics, etc. cannot be isolated from the geographical locations where they are materialized. In this context, as it would not be possible to think of social sciences without Geography, it would not be possible to think of Social Studies without Geography as well (Taşlı, 2020). Here, geography is the science that examines the relationship between human and location and the distribution of natural and human events within the framework of the causality principle (Ünlü, 2020).

The importance of geography teaching in the field of social studies is an undeniable fact. The 4th, 5th, 6th and 7th grade social studies courses cover the "people, places and environments" and "production, distribution and consumption" learning fields of the geography discipline. Geography aims to provide students with the spatial basic knowledge, skills and values necessary for human life. In parallel, the geography-focused "people, places and environments" learning field of the social studies course, as set forth in the MEB 2018 social studies curriculum, aims that the students recognize the environment and the interaction of people with the environment, understand the causes and consequences of this interaction through the use of various skills and values, and gain an individual or social perspective for the future in respect thereof.

The interaction of humans, places and the environments creates a wide and colorful spectrum. In the context of the "people, places and environments" learning field, it is aimed to provide the students at all grade levels in which Social Studies course is taught with *"research, environmental literacy, perception of change and continuity, observation, map literacy and spatial perception skills"*.

On the other hand, in the context of the "production, distribution and consumption" learning field that is based on the discipline of economics and which is also related to "economic geography, it is aimed for students to realize that the resources of the country's economy are limited, to believe in the importance of protecting existing resources, to compare their own economic life with the economic life of others and to set out any differences and/or similarities in between, to examine the economic conditions of the places where they live, and to make efforts to improve these conditions.

As is the social studies course, the disciplines of history, citizenship and economics, topics of which are included in the social studies course, are closely related to geography, as well. Geography offers important clues for understanding the past, as migration routes in history, settlements as well as the emergence and dissolution of civilizations have a lot to do with landforms and climate characteristics (Gençtürk, 2013; Akman, 2016). Geography discipline has an apparent effect on the learning fields of the social studies course is apparent, which is expected considering that the social studies course is created with an interdisciplinary approach. The aims of geography teaching can be summarized as providing students with the ability to examine and synthesize the causes and effects of the geographical distribution of geographical elements, events or activities in the context of a specific geographical location, to think geographically and thereby to approach and analyze geographical problems scientifically, and to develop awareness of using maps, projections and diagrams by making sufficient use of geographical resources (Topçu, 2013).

Geography enables students to understand and make sense of the place and world they live in. As a reason, humans' spatial perceptions are directly related to the location characteristics of the place they live in. Geography education is needed in order for the individuals of the 21st century to understand the political, economic and cultural system and ecological developments, and to take congruous and conscious steps in their interaction with these systems and developments (Ünlü, 2014). Geographical events cannot be comprehended and taught without visiting and seeing different parts of the geographical earth. The field trips that are organized to that effect have both didactic and educational aspects as they encourage students to do research and observation and provide them with the skills to make connections between the events, express their opinions and make inferences (Sağdıç & Demirkaya, 2015).

Geography is a discipline that is suitable for learning activities outside of school. In a broad sense, the field study and the field trip method offers the opportunity to visit the places where the events took place and to make observations and on-site evaluations (Ünal, 2014). The methods and techniques used in the classroom setting will not be as effective as the teaching activities carried out in the geographical location, where students can access information first-hand. In this regard, field trips will also facilitate the attainment of the acquisitions stipulated by the course curriculum. The specific objectives set forth in the 2018 Social Studies course curriculum entail that the students "explain the

interaction between humans and environment by recognizing the general geographical features of the world and the environment they live in, and develop spatial perception skills" and "be aware of the limitations of the natural environment and resources, thereby try to protect natural resources and adopt a sustainable environmental approach". It will be more effective and appropriate to make use of out-of-school environments in order to realize these specific objectives that are directly related to the discipline of geography.

Field studies, which are accepted as a pillar of geography by many geographers, refer to scientific geographical trips and practices carried out in the field. Geographical field trips can be organized to various sites such as industrial facilities, historical places, touristic areas, factories, museums, exhibitions, dams, lakes, streams, plateaus, etc. depending on their proximity (Aydın, 2020).

A review of the acquisitions of the geography-focused *"people, places and environments"*learning field included in the 2018 Social Studies curriculum and which aim to provide students with the spatial basic knowledge, skills and values necessary for human life reveals that the **"field trip"** method can be readily applied within the scope of the social studies course provided that it is planned it in accordance with the said targeted acquisitions.

To to be more specific, field trip method can be used for the attainment of following acquisitions targeted by teaching of the geography subjects included in the social studies course:

Elementary school 4th grade social studies course "people, places and environments" learning field

SB.4.3.1. To make inferences about the location of any place within the environment.

The concept of direction, which was aimed to be taught within the scope of the acquisiton in question, is important both in respect of geography and our daily life. Considering that it is an abstract subject, it is important to teach the concept of direction by concretizing, and field trips will serve the purpose. The theme of "direction" included in the elementary school 4th grade social studies course aims to help students find the location of any object around them relative the their position using various methods. Nevertheles, 4th grade students, who are transitioning to abstract intelligence, find it very difficult to understand the concept of direction (Karatekin, 2006). Direction-finding activities can also be organized in the school garden, but short field trips will undoubtedly provide more opportunities for practice and observation in respect thereof.

Middle school 5th grade social studies course "people, places and environments" learning field

SB.5.3.5. To explain and exemplify the effects of natural disasters on social life.

Turkey is a country, where natural disasters such as earthquakes, landslides, forest fires, avalanches, floods, droughts frequently occur, due to its geographical location, geological structure, landforms and climate characteristics. Therefore, disaster and earthquake education should be given to the students nost just theoretically but also practically (Şahan & Dinç, 2021). In this context, field trips to Disaster Training Centers can be organized in order to raise awareness of the students in that regard and have them learn the content by practicing the measures to be taken for protection against disasters in person.

Middle school 6th grade social studies course "people, places and environments" learning field

SB.6.3.2. To examine the landforms, climatic features and vegetation of Turkey's basic physical geography features on the relevant maps.

The acquisition in question aims to provide students with spatial perception and map literacy skills, values of patriotism and sensitivity to the natural environment (MEB, 2018a). In a broad sense, geographical field trips can be organized including the use of maps to attain this acquisition. Specifically, field trips directed at the teaching of a specific type of landform, i.e. "mountain, plateau, plain, valley, etc." or vegetation, i.e. "steppes, maquis, etc.", included in the course content can be organized. As a matter of fact, the results of the studies conducted to investigate students' misconceptions about certain concepts of geography revealed that students often confuse various types of land forms, i.e. plains, plateaus, valleys, slopes, etc. as well as vegetations, i.e. maquis, prairies and steppes (Alım, Özdemir & Yılar, 2008; Boz & Çoban, 2019). With field trips, students get the opportunity to understand the subjects, the theory of which they were already taught, yet they had difficulty understanding, by observing, studying, evaluating and associating geographical events and formations on site and making inferences in respect thereof (Aydın, 2020). Hence, use of field trips in the teaching of geographical themes will help students to avoid any related misconceptions.

Middle school 7th grade social studies course "people, places and environments" learning field

SB.7.3.1. To make inferences about the factors affecting the settlements from the past to the present through case studies.

World's first settlements, which emerged from the effort to create space, one of the basic needs of human beings, can be find in every corner of the Anatolian lands. The use of the field trip method in order to attain this acquisition will be expedient in terms of both instilling historical awareness in students and providing them with the opportunity to evaluate the factors affecting the settlements from the very first settlements to the present.

Field trips to be organized to sites that cast light on the history of humanity such as Çatalhöyük (Konya), Hacılar (Burdur), Göbeklitepe (Şanlıurfa), Çayönü (Diyarbakır), which are among the very first settlements in the world, will provide students with the opportunity to learn by experiencing and observing the effect of geography on settlement and civilizations on site.

Prior to using the field trip method in the social studies course, it is essential that the teacher first determines the site to be visited and then the scope of the teaching activity in accordance with the objective, acquisition, skill and value aimed to be gained. It is crucial that the field trips made to out-of-school environments are well-planned sufficiently in advance. Buting (2006) stated that the planning phase of an out-of-school teaching activity is just as crucial as the activity itself. Therefore, it is necessary to determine the objectives of, and plan, the field trips made to out-of-school environments and the activities organized in these environments.

Accordingly, the principles to be followed during the planning phase of the field trip and during and after the field trip are as follows:

Preparations to be made before the field trip

- Students should be informed about the site to be visited within the scope of the field trip and the objective of the field trip in advance.
- Field trip should be planned in detail, and the parents of the students should be provided with a sample of this plan.
- School administration's and parents' consents must be sought prior to the trip, particularly taking into consideration that the teacher who plans the trip bears legal responsibilities.
- Students should be informed about the preparations they should be making, including clothing, and to take their field trip log books with them.
- In the event of long-distance field trips including overnight stays, necessary official correspondences should be exchanged between the management of the place of stay and the school administration in advance.
- The list of the names of the students participating in the field trip should be submitted to the school administration.

Principles to be followed during and after the field trip

- Appropriate safety precautions should be taken during the field trip.
- It should be ensured that students take notes about the observations made during the field trip.
- Students should be allowed to discuss the observations they made during the field trip and express their opinions in respect thereof and ask questions.
- It should be made sure that the impressions, information, and the experience

gained during the field trip are discussed after the field trip.

- It would be very helpful to have students prepare a report on the outcome of the field trip.

It is commonly thought that the implementation phase of the field trip is difficult, which is in fact true to a certain extent. Nevertheless, field trips made to geographical sites come with a lot of benefits such as instilling the concept of "observation", which is one of the most rooted and most important aspects of the scientific method of research, in students, and enabling them to make connections between the environment, people and events (Doğanay, 2014). As a reason, the field trip method provides students with the opportunity to learn by experience, as opposed to the theoretical studies carried out in the classroom environment. However, it is important that an evaluation is made on the outcomes of the field trip afterwards, in order to achieve permanent learning. To this end, notes taken during the field trip, materials collected, photographs taken, films shot, sound recordings, etc. should all be evaluated in detail. It would be wise to use the field trip method to gain students the habit of taking notes during an observation. In this way, students can remember the things that they would have forgotten otherwise, during the evaluation of the field trip made in the classroom. In this context, students may be asked to tell, write or draw about their thoughts and observations regarding the field trip, or even to draw a layout, model or map, as applicable (Tok, 2021). It is important that the students present their observations about the field trip in a concrete way during the evaluation activities carried out afterwards, in order to determine the extent which the targeted acquisition was attained.

CONCLUSION

A systematic curricular development process in Turkish education system was initiated in 2005 in line with the changing needs of the time. As a result, the curricula were changed to a substantial extent and maintained until today with revisions made in 2018. This curricular development process, which is based on the constructivist approach, has also directly affected the learning and teaching methods used in association with the curricula. The aim of this curricular development process is indicated as to raise qualified individuals with learner-centered and skill-oriented practices based on active learning. Nevertheless, appropriate learning environments should be provided to students to that effect. At this point, out-of-school learning learning, as a method of learning based on the constructivist approach that provides such environments and offers real-life opportunities, stands out as a method that best serves the purpose of this curricular development process.

Social studies course, as a course created by an interdisciplinary approach, is a suitable course for the implementation of out-of-school learning activities by its very nature. Out-of-school learning allows students to experience the theoretical knowledge they learned at school in appropriate environments. To this end, content of the social studies curriculum includes the principles for choosing learning environments suitable for teaching the subjects of social sciences and carrying out the activities in these environments. The most important feature of out-of-school learning activities is that they offer a different learning setting other than the classroom environment and provide the student with the opportunity to learn by experience in a setting that is more relevant to the acquisition targeted with the teaching of a specific lesson. In this context, the field trip method, which is an out-of-school learning method based on student-centered activities developed in accordance with the constructivist approach, emerges as a particularly relevant method for the social studies course, given the acquisitions, skiils and values aimed to be attained within the scope of specific learning fields of this course.

Field trips are planned under the supervision of the teacher of the respective course within the framework of the acquisitions of the course curriculum, and provide the opportunity to examine and evaluate the events on the spot. As is the case with all learning fields included in the social studies curriculum, holding activities within the scope of the field trip method in the context of learning field of “people, places and environments”, which is a learning field that includes geography subjects, will ensure that efficient learning takes place.

Turkey is a very rich country in terms of natural and cultural resources. There are many geographical sites which can be visited and utilized in the context of teaching of geography subjects included in the social studies course. Field trips to be made to such sites will allow students to gain experience in the geographical sense and to have the opportunity to examine geographical elements, events or activities on-site through observations they will make within the scope of group work.

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Chapter 11

THE CULTURAL FUNCTION OF THE LIFE SCIENCES COURSE IN THE 2000's

THE CULTURAL FUNCTION OF THE LIFE SCIENCES COURSE IN THE 2000's

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INTRODUCTION

The family is the first environment where individuals meet life. Individuals acquire many vital information needed to adapt to social life in these environments. Individuals learn their native language, culture, traditions, and many other social structures in the family. As social beings, individuals perform their first socialization activities in the family. From this point of view, the family is the first educational institution in individuals' life. After the family, the social environment in which individuals live mostly is schools. Schools are one of the most important socialization areas of today's world, where peers come together.

Starting their school life, young individuals learn basic information from various courses, especially in elementary schools. The most important ones in Turkey are Turkish, math, and life sciences. While Turkish aims to provide students with the details of linguistics, and math aims to provide students with numerical competencies, the life sciences aims to provide students with life knowledge in all aspects. As the name suggests, life sciences is the science of life itself. It is all of the knowledge, skills, and behaviors that will prepare individuals for social life and make their life easier. The life sciences course can be considered as the continuation of the basic life skills and knowledge patterns that individuals begin to learn in the family. However, individuals sometimes acquire undesirable behaviors because of random learning in the family. They incorporate these informal learnings that are far from a ceratin format into their own lives. Thanks to the life sciences course, the knowledge that is aimed to be attained by the student is given with a systematic and specific program. In this context, the life sciences course is a life preparation guide for individuals.

The life sciences course gives children the opportunity to consider life as a whole, to understand and make sense of events. In addition, it helps them to know themselves and their environment in all aspects. It brings awareness about the meaning of the rules that are accepted by society and about the chaos that can be experienced in the absence of rules. From this point of view, the life sciences course undertakes the mission of bringing up good citizens and a adaptable individuals.

Culture in general refers to the whole way of life and thinking of a society. The most fundamental factor that makes societies different from each other is culture. In a sense, culture is the identity of a society. Culture is a very broad concept. Different disciplines have evaluated the many interrelated elements of culture as a whole. In addition, culture has a defining characteristic but also has a limiting task. Culture draws boundaries on how individuals should behave in society since behaviors that are not appropriate for the cultural structure are condemned by society. In this case, individuals who do not want to be excluded from society tend to conform to social norms in general. Therefore, culture makes certain behaviors and mentalities necessary, even compulsory.

In this section, the cultural function of the life sciences course and curricula are emphasized and general information is presented.

1. Definition, Purpose, Scope, and Content of the Life Sciences Course

Life Sciences is a course included in the 1st, 2nd, and 3rd grade curriculum of elementary schools in Turkey. In terms of weekly hours, it is one of the three most taught courses along with Turkish and math. Life sciences is taught four hours a week in the 1st grade, four hours a week in the 2nd grade, and three hours a week in the 3rd grade (MEB, 2020). The subjects in the life sciences course are structured with concrete facts whenever possible and from the close environment of the students such as their homes, families, schools, and peers in accordance with their lives (Kabapınar, 2019). The fact that the subjects are related to life and presented in a concrete way in accordance with the development of elementary school students helps students better structure their life experiences. From this point of view, the purpose of life sciences is to enable young individuals who do not fully know life yet to acquire life skills and use them in their lives since life sciences guides children in this wide world (Talim Terbiye Kurulu, 2005:22). Contributing to the child's adaptation to the social environment in which he/she lives and taking into account the psycho-social development of the child, student-centered life sciences is one of the important courses in basic education that incorporates different disciplines, teaches information to the child by learning by doing, and prepares them for their next level of education (Tay & Yıldırım, 2013; Ocak & Beydoğan, 2005). With its scope, it actually provides basic information to many courses. While life sciences is a starting point for Turkish, math, music, arts, physical education in the first three years of elementary school, from 4th grade onwards, it leaves its place to other courses such as science (3 hours), social studies (3 hours), human rights, citizenship and democracy (2 hours), and traffic safety (1 hour) (MEB, 2020) and guides them in terms of content (Gültekin & Gündoğan Çögenli, 2014).

Planned in line with the understanding of collective teaching in education, life sciences was designed for children to get to know themselves, the society they live in, and the world, and to perceive life as a whole (MEB, 2009). According to Bektaş (2007), thanks to life sciences, children have the opportunity to get to know the natural and social environment they live in, and the characteristics of their peers and themselves. In addition,

children learn how, where, and to what extent the various materials that they own or around them can be used and gets the opportunity to improve their life with the use of these materials (Şahin, 2009). Kabapınar (2012) argued that in life sciences students can acquire basic scientific knowledge, and acquire the skills necessary to solve the problems they encounter, to establish healthy relationships with other people in their lives, and to take on life responsibilities.

Developing the biological, social, and cognitive zones of development (Tay & Yıldırım, 2013; Karabağ, 2006) and establishing a ground for the knowledge that children will acquire throughout their life with a structure that includes social, artistic, and intellectual values (Acat, Anılan, Girmen, & Anagün, 2005) are among the objectives of the life sciences. While the life sciences curricula aim students to get to know the nature and society in which they live, to adapt to these environments effectively, and to be physically, spiritually, and mentally strong, the main purpose is to help students acquire basic skills and values related to life and contribute to their personal and social development (Avcı & Kayabaşı, 2017). Furthermore, the life sciences course aims for children to become individuals who adapt to the society they live in, help them learn the historical, cultural, and social structure of the society they live in, and acquire the behaviors required by social life (Bahçe, 2010). With life science, children learn the rules of school and classroom, the rules necessary for living in harmony in the society, the respect and honesty of individuals towards each other, cooperation, contribution, and democracy. With this course, which is a reflection of real life, children make predictions for the solutions of possible problems they may encounter throughout their lives, learn to produce original solutions as a result of generalizations and analyses they make (Bahçe, 2010), develop themselves, think multi-faceted and creatively, and attain skills such as problem-solving using high-level cognitive and affective characteristics. As can be seen, the most fundamental task of life sciences is to provide students with the necessary basic knowledge and skills and to introduce their immediate environment to them. Considering that culture, which is the most distinctive element of societies, cannot be separated from life, the concepts of life sciences and culture are two parts that are very close to each other and even complement each other. This gives life sciences a cultural function because while life sciences introduces the students' immediate environment and social life to them, it cannot do this independently of cultural elements. On the contrary, life sciences presents the general rules and characteristics of society and social life to the students by using culture. While doing this, life sciences realizes cultural transmission.

2. Brief introduction of life sciences curricula in the 2000s (2005, 2009, 2015, 2018) and their learning objectives

The life sciences curriculum includes the course learning objectives, values, competencies and skills of elementary school 1st, 2nd, and 3rd grade students, the educational process, and the measurement and evaluation activities to be used in this process (Köse-Çengelci, 2014). Comprehensive works were initiated in 2004 in order to develop a curriculum

based on the constructivist approach that gained momentum in Turkey towards the 2000s. The reasons for these curriculum development works were the developments in the information society, the learning understanding developed within the framework of the lifelong learning approach, and the compliance with the European Union norms. With the 2005 curriculum, which was developed as a result of these curriculum development works, the behaviorist approach was replaced with the constructivist approach (Şahin, 2009). Especially with the effect of both the constructivist approach and social and technological developments, the curricula developed after the 2000s had significant differences from the curricula developed before the 2000s. Since 2000, four curriculum changes were done, in 2005, 2009, 2015, and 2018. The 2005 Elementary School Life Sciences Curriculum included the curriculum's vision that was made up of the course's goals, curriculum's basic approach and structure, skills, special goals, teaching process, and measurement and evaluation. The curriculum stated that man is both the subject and the object of change as a whole with its biological, psychological, social and cultural aspects (MEB, 2005). The content given with this curriculum was developed for the first time based on learning domains and the thematic approach, unlike the previous curricula. Different from the previous curricula, to present the course content, three learning domains were determined, namely "The individual", The society" and "The nature" (Şahin, 2009). The themes of the 1st, 2nd and 3rd grade life sciences were determined as "My School Excitement", "My Unique Home", and "Yesterday, Today, and Tomorrow" (MEB, 2005). The 2005 Elementary School Life Sciences Curriculum aimed to develop students' skills such as critical thinking, creative thinking, research, communication, problem-solving, using information technologies, providing security and protection, and self-management. In addition to these skills, the curriculum planned to help students develop personal qualities and values such as self-respect, self-confidence, collectivism, patience, tolerance, love, respect, peace, benevolence, truthfulness, honesty, justice, openness to innovation, patriotism, and protection and development of cultural values. With this curriculum, unlike the previous curricula, an understanding that takes into account the process in measurement and evaluation, as well as the result, was adopted by paying attention to the "alternative" assessment approaches based on the constructivist learning theory. The transition to this assessment approach emerged as a result of the preference for the constructivist approach in the curriculum (Beyaztaş, Kaptı, & Senemoğlu, 2013).

The 2009 Life Sciences Curriculum included the themes of "My School Excitement", "My Unique Home", and "Yesterday, Today, and Tomorrow", which were common to the 1st, 2nd, and 3rd grades and were the same as the 2005 curriculum. The themes in the curriculum show that the learning domains and thematic approaches used for the first time with the 2005 program continue to be used in this curriculum as well. The vision of the new curriculum was to raise happy individuals who enjoy the learning activities, are at peace with themselves, their social environment and nature, have basic knowledge, life skills and the equipment required by the age, and can adapt to change (MEB, 2009). Very similar to the 2005 Elementary School Life Sciences Curriculum, the 2009 curriculum did not include general goals and behaviors, unlike the 2005 curriculum, but included

learning objectives. These learning objectives were developed to integrate with the determined themes. In the program, whose primary goal was for students to acquire basic life skills, although the skills in the 2005 curriculum were not changed, skills such as entrepreneurship, using Turkish correctly, effectively and beautifully, recognizing the basic concepts of science, and recognizing the basic concepts related to themes were added to the 2009 curriculum, (MEB, 2009). These newly added skills aimed students to attain the skills of using information technologies and entrepreneurship.

The 2015 Elementary School Life Sciences Curriculum included the vision, goals, skills, values, organizational structure, measurement-evaluation, explanations regarding the implementation of the curriculum, and expectations from teachers. The vision of the curriculum was to raise individuals who have basic life skills, know themselves, lead a healthy and reliable life, are sensitive to nature and the environment, research, have high self-confidence, are at peace with their environment and themselves, and internalize national and spiritual values (MEB, 2015). While the statements of "who enjoy learning" and "who are flexible enough to adapt to changes dynamically" from the 2009 curriculum were not included in the 2015 curriculum, the statement of "who have high self-confidence" was included in the 2015 curriculum (Tay & Baş, 2015). In the program, there were 14 general goals that were reflected in the learning objectives in line with the general goals and basic principles of Turkish National Education. The stages of planning general goals and learning activities and developing teaching materials should be assessed in integrity (MEB, 2015). The organizational structure of the curriculum covered the courses' goals, basic life skills, concepts and values, units and learning objectives (Güven & Kaymakçı, 2016). Used in the contents of the 2005 and 2009 curricula, the thematic approach was replaced by a unit-based approach in 2015. In all three grade levels, six units were determined. There were "Me and My School", "My Family and Home", "Healthy Life", "Safe Life", "I Love My Country", and "Nature and Environment". Although it was not clearly stated that the content was planned in line with the spiral approach, some of the learning objectives were repeated in the upper classes. It is noteworthy that the curriculum, which included 22 skills and 20 values in total, was simplified compared to the curricula implemented in previous years. The removal of the activity examples from the curriculum is another indicator of this simplification.

Finally, the 2018 Elementary School Life Sciences Curriculum includes the course's goals, skills, the points to be considered in the implementation of the curriculum, the structure of the program, the dimensions of the textbook, and the learning objectives and their explanations (Aktay & Çetin, 2019). The main goal of the curriculum is to raise individuals who have basic life skills, know themselves, lead a healthy and reliable life, absorb the values that are the treasures of the society they live in, are sensitive to nature and the environment, research, produce and love their country. In line with this goal, the 14 general goals, which were also included in 2015, are also specified in the 2018 program and are reflected in the learning objectives. The values expressed in the 2015 curriculum are called the root values in the 2018 curriculum, and many of the values

focus on basic values instead of "giving". These root values are "justice, friendship, honesty, self-control, patience, respect, love, responsibility, patriotism, benevolence" (MEB, 2018). The "Competences" section, which was not included in the curricula before, is included in the 2018 curriculum for the first time. The "Turkish Qualifications Framework (TQF)", the range of skills that students need in their lives, was developed to realize our education system's aim of raising individuals with knowledge, skills, and behaviors integrated with competencies. Designed to be compatible with the European Qualifications Framework, the TQF refers to the national qualifications framework that shows all the qualification principles gained through vocational, general, and academic education curricula, including primary, secondary and higher education, and other learning ways (MYK, 2021). These competencies in the TQF are "communication in the native language, communication in foreign languages, mathematical competency and basic competencies in science/technology, digital competency, learning to learn, social and civic-related competencies, taking initiative and entrepreneurship, cultural awareness and expression" (MEB, 2018). Unlike other previous curricula, the measurement and evaluation approach in the 2018 life sciences curriculum is explained in detail. Since no one is exactly the same as another, it is against human nature to design the curriculum and the measurement and evaluation process "appropriate for everyone". Therefore, it is necessary to act with maximum diversity and flexibility in the measurement and evaluation process. Due to individual differences, it is not appropriate to talk about a universal and uniform measurement and evaluation method for all students. Because of the individual or cultural differences of each student in the classroom, measurement and evaluation activities should be carried out by taking these differences into account. In today's world, societies increasingly host more than one culture together. This brings multiculturalism with it. This cultural richness is also reflected in classrooms. Thus, at the end of the course, it cannot be assumed that every student attains the same learning objective equally. Therefore, different measurement and evaluation activities are needed for students from different cultures.

3. What is culture?

The concept of culture has a very broad scope in its essence because a society's language, thought, dressing, eating and drinking, games, behavior patterns, habits, and almost everything about life reflects the culture of that society. This wide scope of culture made it difficult to come up with a definition of culture that everyone agrees on. Thus, there are different definitions in the literature. According to DiStefano and Maznevski (2000), culture is the assumptions and norms determining how individuals in a society will interact with each other and what ways they will follow in their work. According to Hofstede (1980), it is common sense that differs one group from another. Human-made, culture has man at its center and is the totality of the individual who is an integral part of the society (Yalçınkaya, 2016). Culture also refers to the basic characteristics belonging to a particular social group and distinguishing this group from other groups. This means that different groups have different cultures (Yeşil, 2011). Many different definitions can be

added to these definitions. When the definitions of culture are examined, it is seen that all these definitions of culture include a society's abstract or concrete symbols encompassing all the descriptive elements of that society. Based on the aforementioned characteristics, culture can be defined as the sum of the emotions, thoughts, behaviors, and values which distinguish a group or society that has preferred to live together under the influence of a certain binding element such as religion, language, or race, from other groups or societies.

4. The importance of culture

As mentioned before, culture is the sum of emotions, thoughts, behaviors, and values of a society. In other words, culture is a dynamic social structure. It is passed down from generation to generation and changes over time. It is not innate, on the contrary, the individual is cultured by going through experiences after birth. First interacting with the family after birth and then interacting with the immediate environment, the individuals learn how to behave, speak and think in society in this process. The norms that are appropriate in their culture direct individuals' behavior. According to Mutlu (1999), culture is shared by all members of the society, is limiting, symbolic and consists of parts that complement each other. In this context, in order to understand individuals' thoughts, emotions, behaviors, and values, it is necessary to first understand individuals' culture since culture directs individuals' emotions, thoughts, behaviors, and values, and the individuals even act according to the culture without even being aware of it. Another important aspect of culture is that it helps foresight. Shared by all members of the society, culture also helps determine how these members will react to a particular event.

Culture makes itself felt in almost every aspect of life. This gives culture an encompassing characteristic. Yeşil (2011) stated that there is almost no area in human life that culture does not affect, and it is a very important phenomenon in this respect. White (1999) argued that individuals with similar cultural backgrounds understand each other much better and try to interact more. Similarly, many authors (Mead, 1998; Mutlu, 1999; Stephens & Greer, 1995) stated that the importance of culture is undeniably great in evaluating and interpreting people, in interpersonal relations, and in many social, economic, and political areas.

5. The Relationship Between Life Sciences and Culture

Life sciences help students to adapt to their environment by recognizing and improving themselves. According to Binbaşıoğlu (2003), life sciences provide important contributions to the students' adaptation to social life. Binbaşıoğlu (2003) argued that life sciences is the first course that enables children to adapt successfully to the environment they live in. From this point of view, it can be said that the life sciences course is the most appropriate course to transfer student experiences to the classroom because the subjects of this course are based on man, nature, and society. As it is often emphasized above, the concept of culture is in a very close relationship with life itself. Therefore, culture exists wherever

people, nature, and society exist. Again, as stated above, culture directs how individuals should think and behave. In short, it helps individuals to adapt to their environment in the first degree. When evaluated from this point of view, it can be stated that the life sciences course and the phenomenon of culture are closely related to each other and that these two elements are even in need of each other.

With subjects in life sciences, the cultural codes of the society are transferred to the students. In addition, students come to the classroom with their cultural backgrounds. From this point of view, life sciences and cultural codes complement each other. The sense of totality here does not mean the total, it indicates the harmony and accord of the parts that make up the total. As Sönmez (1998) stated below, life sciences is a discipline that includes many elements reflecting the culture of the society.

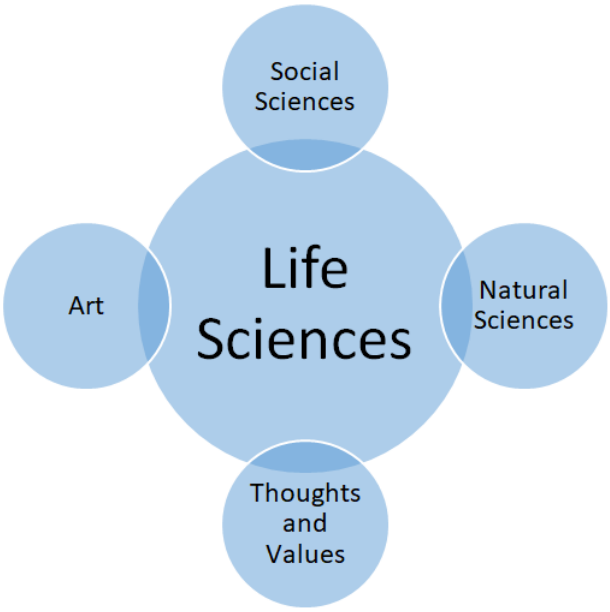

***Figure 1**: Scope of Life Sciences (Sönmez, V. (1998). Hayat Bilgisi öğretimi ve öğretmen kılavuzu, Anı yayıncılık.)*

Culture is the general habits and lifestyle of a society. One of the important tasks of culture is to create social unity by ensuring harmony between individuals. In societies with a strong culture, national consciousness and solidarity are at a high level. In this sense, culture directs the future of both individuals and society and shapes the lives of individuals. In a way, culture shapes social life. In summary, culture is everything that concerns life. Arıbaş and Yılmaz (2004) defined life sciences as "a course of life".

Therefore, it can be stated that culture and everything related to culture is within the scope of the life sciences course. In addition, many cultural elements are within the content of the course. In summary, life sciences has a very important function in the transmission of culture and the cultural elements that will be presented to elementary school students can be easily given with this course.

6. Result

The examination of life science curricula that were put into practice in Turkey in the 2000s reveals that cultural awareness is not given much place. The 2005 curriculum stated that the individual is a whole with social and cultural aspects as well as being a biological entity. For this reason, life sciences is sensitive to cultural differences. The 2009 and 2015 curricula emphasized greatly and included expressions that assimilate the lifestyle of the society such as protecting and developing cultural values and internalizing national and spiritual values. These social values continued to be emphasized in the 2018 program as well. Also with this curriculum, the cultural aspect of life sciences curricula was put forth with expressions such as “communication in the native language and foreign language” and “cultural awareness” in the TQF. Another important point is that the measurement and evaluation activities in the 2018 program are planned in line with diversity. Accordingly, measurement and evaluation activities should be carried out based on cultural diversity considering the fact that not every student in a classroom is a copy of each other. In today’s world, communication is versatile and intense. Thanks to this characteristic of communication, the meeting and mingling of cultures are faster and more intense than ever before. For this reason, the curriculum and content of life sciences which is the course of “life” should be updated in accordance with the times in order to increase its cultural function.

As a result, very closely related to each other, life sciences and culture cannot be considered separately from each other, and the lack of one leaves the other incomplete because life sciences introduces life to students, and culture is life itself. In short, the life sciences plays an important role in the transmission of culture. For this reason, cultural elements should be given much more space within the scope of life sciences.

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Chapter 12

TRANSITION TO SECONDARY EDUCATION IN TURKEY OVER 20 YEARS AND ITS REFLECTION ON MATHEMATICS QUESTIONS

TRANSITION TO SECONDARY EDUCATION IN TURKEY OVER 20 YEARS AND ITS REFLECTION ON MATHEMATICS QUESTIONS

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INTRODUCTION

One of the most important components of the education system is measurement and evaluation activities. According to Baykul (2000), education is a system that improves human behavior. The elements of this system can be listed as input, process, output and evaluation. Input in the education system consists of many factors such as the student's prior learning, readiness, the characteristics of the educational environment and the teacher. The process is the activities carried out during the implementation of the educational program, in other words, educational situations. The output is the knowledge and skills acquired by the student at the end of the education process. The evaluation, which is the last stage of the system, is quite important for the determination of the problems in the system and the development of the system. The control of the education system is possible through assessment and evaluation. The assessment provides valuable information about to what degree the objectives are achieved, and evaluation activities play a role in making some decisions (Carter & Norwood, 1997). Besides in-class assessment activities to measure student success, central exams are also required. The general purpose of all educational institutions is to prepare students for the profession, business life or the next level of their educational life by their interests and abilities (Gedikoğlu, 2005). Central placement exams have always existed in our country. To meet the strong interests of students in these institutions, especially in high school and university preferences, there is a requirement for an objective assessment and evaluation system that accurately measures their knowledge levels and predisposition to the department (Şad & Şahiner, 2016). Although these exams are milestones in students' lives, they are also an important assessment tool in determining the success level of students.

Along with national central exams, international exams are also held in our country. International exams such as PISA (Programme for International Student Assessment),

TIMSS (Trends in International Mathematics and Science Study), and PIRLS (Progress in International Reading Literacy Study), which are applied to measure the high-level mental characteristics of students and to guide the education policies of countries, aim to monitor the progress of participating countries in science, mathematics and reading skills (İncikabı et al., 2016). Since 2003, Turkey has been participating in the PISA exam, which has been held every three years since 2000. The PISA exam aims to determine the level of 15-year-old students to have the basic knowledge and skills necessary to keep up with the era. With the data obtained from the PISA exam, participating countries can also find the opportunity to evaluate their education and training systems. Exams such as PISA are held at an international level. However, since such exams are held in many countries in a common framework, a national exam was required. Similar to the PISA exam, the ABIDE (Monitoring and Evaluation of Academic Skills) Project has been held in our country since 2016 (MEB, 2019a).

The outputs of the central exams are both taken as a reference in guiding education policies and used to place students in a higher education institution in our country, as in many countries (Özer-Özkan & Acar-Güvendir, 2018). As in our country, the secondary education placement system in the world is carried out by taking the results of the central exam as a criterion, but there are also different procedures. In some countries such as Singapore, China, France, Russia, and Italy, students are placed at the end of secondary school according to the results of the final exam, however in Germany and India, the school and family decide together (Ulusoy, 2020). In some states of the United States, the address factor is taken into account, and in England, students are placed in the school closest to their address with the preference guide offered to families without a central exam. School graduation scores are taken into account for placement in secondary education institutions in Finland (Ulusoy, 2020). The methods used by different countries in transition to secondary education are given in Table 1 in detail. In Turkey, central assessment and evaluation for placing students in secondary education institutions are carried out by national exams by the Ministry of National Education.

Table 1: Systems Used by Some Countries in Transition to Secondary Education

Country	Exam			School Performance		Address Based Registration System
	School Graduation Exam	Central Placement Exam	School-Based Placement Exam	School Grades	Teacher Reviews	
USA		✓				✓
England			✓			✓
Japan		✓	✓	✓		
Hungary		✓	✓	✓		
South Korea		✓		✓		
Holland		✓				
China	✓					
France	✓			✓	✓	
Russia	✓					
Italy	✓					
Denmark	✓		✓			
Singapore	✓			✓		
Switzerland			✓	✓	✓	
Germany				✓	✓	
Finland				✓		
India					✓	

(Demir & Yılmaz, 2019)

Some researchers on central exams stated that elimination is compulsory due to the factors such as Turkey's growing population and inadequacy of the current infrastructure as a result of that, the limited number of qualified schools and shortage of teachers (Büyüköztürk, 2016). On the other hand, there are also researchers who argue that the evaluation of all students with the same central exam will deepen the existing inequality of opportunity (Yılmaz & Altınkurt, 2011). Although the cancellation of the student placement exam in secondary education institutions has been discussed for years, it is seen that every changing system is a new exam.

***Figure 1**: Changes in the Ministry of National Education and Secondary Education Examinations Between 2003-2022.*

In order to overcome the problems in selecting and placing students in secondary education institutions in Turkey, different central examination systems have been tried. Factors such as failure of previous systems to meet expectations, conversion of regular high schools to Anatolian high schools as of 2010, and extension of compulsory education to 12 years with the 4+4+4 regulation implemented in 2012 have increased the discussions on the transition to the secondary education system. These exams are also a prerequisite for transitioning to a higher level along with their role in determining the student levels and success. An accurate and objective assessment-evaluation system has been required to determine student success. For this purpose, five different central examination systems have been used since 1998 for the transition to secondary education. As can be seen in Figure 1, these exams are High School Entrance Exam (LGS), Secondary Education Institutions Selection and Placement Exam (OKS), Level Determination Exam (SBS) held in 6th, 7th and 8th grades, Transition from Basic Education to Secondary Education (TEOG) and lastly, the High School Transition System (LGS), which is held only in the 8th grade.

LGS (High School Entrance Exam)

With the transition to 8-year uninterrupted compulsory education in 1998, it was combined with the Anatolian High School Entrance Exams held at the end of primary school and held under the name OÖKÖSYS (Secondary Education Institutions Student Selection and Placement Exam). Since this name is too long, it was shortened to LGS, that is, High School Entrance Examination. After 8-years of compulsory education, the secondary school sections of Anatolian high schools were closed. With this arrangement, students participated in the high school placement exam LGS to be placed in Anatolian high schools and science high schools. The test included 25 questions from each of the Turkish, Mathematics, Science, and Social Studies courses and the duration of the exam was 120 minutes. The results obtained in LGS were effective in placements in secondary

education institutions until 2004 (Görmez & Coşkun, 2015). In the 2004-2005 academic year, this exam was named OKS (Secondary Education Institutions Selection Exam and Placement Exam).

OKS (Secondary Education Institutions Selection and Placement Exam)

Between 2004 and 2008, the Secondary Education Institutions Selection and Placement Exam was held by the Ministry of National Education to select and place students in private and public high schools. This exam was given to 8th-grade students in a single session in which they were responsible for Turkish, Mathematics, Science and Technology, and Social

Studies courses. As the distribution of questions in the exam can be seen in Table 2, a total of 100 questions were asked, 25 from each course, and the students were asked to answer these questions within 120 minutes. Since the examination was before introducing the 12-year compulsory education (4+4+4) in 2012, students were held responsible for the 6th, 7th and 8th-grade curriculum, the second level of primary education. With the scores they got from OKS, they were able to apply to the following schools (MEB, 2008).

- •Turkish and Foreign Private Schools
- •Anatolian High Schools
- •Science High Schools
- • Social Sciences High Schools
- • Anatolian Teacher High Schools
- • Anatolian Technical and Anatolian Vocational High Schools
- • Vocational High Schools Affiliated to Institutions
- • Police College (Qualification Exam)

The number of questions and weighted coefficients of the courses in OKS are given in the table below.

Table 2: Number of Questions and Weighted Coefficients of Courses in OKS

	Number of Questions	TM Coefficients	MS Coefficients
Turkish	25	3.5	3
Mathematics	25	3.5	4
Science and Technology	25	2.5	4
Social Studies	25	2.5	1
Total	100		

(MEB, 2008)

As can be seen in Table 2, the most significant subtest in both TM (Turkish-Mathematics) and MS (Mathematics-Science and Technology) score types are the Mathematics test. Turkish in the TM score type and Science and Technology course in the MS score type

are the most significant tests with the Mathematics course. It is understood from the table that the mathematics test questions constitute 25% of the total questions.

It was observed that students' interest in learning at school decreased in the secondary education placement system according to the OKS score. School absenteeism has also increased since final year students focus on private lessons and private teaching institutions (Atılgan, 2018). To solve this problem, primary school success scores were added as 7% of the placement score, as well as the scores they got from OKS as of 2007 (Atılgan, 2018). OKS was held all over Turkey and in various countries abroad to place students in secondary education institutions from 2005 to 2008-2009 academic year. The fact that OKS is a single test consisting of multiple-choice questions applied in the last year of secondary education and discussions on the pressure and stress of having students' futures rely on such a single test led to the change of this model in 2009 (Atılgan, 2018). In 2008, while 8th-grade students were taking the final OKS exam, 6th and 7th-grade students took the SBS exam in line with the OGES (Secondary Education Transition System), which was newly introduced (MEB, 2015). After 4 years of OKS, SBS was introduced.

SBS (Level Determination Exam)

Instead of OKS, which has been held since 2005 in the transition to secondary education institutions, SBS was introduced in 2009 within the scope of OGES. Unlike OKS, SBS was held until 2013 as a model consisting of multiple-choice tests given in 6th, 7th and 8th grades instead of a single test given in the last year, and again, unlike OKS, foreign language questions were also included. Secondary school placement score consists of the weighted combination of SBS results and school success scores within the scope of OGES. At the end of the 6th, 7th, and 8th grades, SBS was held by the Ministry of National Education, limited to the achievements in the curriculum of those years. The number of questions and weighted coefficients of the courses in SBS are shown in Table 3.

Table 3: Number of Questions and Weighted Coefficients of Courses in SBS

	Number of 6th Grade Questions	Number of 7th Grade Questions	Number of 8th Grade Questions	Weighted Coefficients
Turkish	19	21	23	4
Mathematics	16	18	20	4
Science and Technology	16	18	20	3
Social Studies	16	18	20	3
Foreign Language	13	15	17	1
Total	80	90	100	

(MEB, 2013)

As can be seen in Table 3, Mathematics subtests constituted 20% of all questions in each of the 6th, 7th and 8th-grade tests, and it is seen that the ratio of mathematics questions to total questions decreased compared to the OKS exam (25%). This can be explained by including the foreign language subtest in the exam. Also, the weighted coefficients of the Mathematics and Turkish subtests are higher than the other courses. The mathematics subtests maintain their characteristics of being one of the significant subtests as in OKS.

In SBS, 70% of the score taken basis for placement is composed of SBS scores, 25% is primary school success score and 5% is conduct grades. However, in 2010, adding the conduct grade to the placement score was stopped by the Council of State. Thus, SBS continued until 2013 with the calculation of the placement score by adding 70% SBS score and 30% primary education success score. In 2013, SBS was canceled and replaced by TEOG due to the criticism that the psychology of the students is negatively affected by the exams held every year at young ages and every grade level (Atılgan, 2018). On the other hand, SBS was gradually abolished as of 2010. It was held only for 8th-grade students in 2012 and later (Atılgan, 2018).

TEOG (Transition from Primary Education to Secondary Education)

With the transition to the 4+4+4 education system in 2012, the TEOG exam system was introduced instead of the SBS to end exam anxiety in students and eliminate the widespread private teaching activities (Pura, 2020). TEOG, which was held since the 2013-2014 academic year, was a central and multiple-choice exam consisting of one of the semester exams of each of the six basic courses namely Turkish, Mathematics, Science and Technology, Turkish Republic Revolution History and Kemalism, and Religious Culture and Foreign Language courses (MEB, 2016). Since the central exam held in this way was also accepted as one of the written exams included in the students' end-of-term grades, a placement period started with TEOG, in which not only students who request it, but all students have to take the exam.

The simultaneous practice of the domestic curriculum, increasing the role of schools and teachers, spreading the evaluation of school success to the education process and decreasing absenteeism are among the purposes of transition to the TEOG exam system. Also, evaluation of teachers' performance is one of the purposes. The TEOG system is aimed to prevent students who have valid excuses from losing their rights by taking the make-up exams (Buluç et al., 2014). To reduce exam stress, students were allowed to take TEOG in their own schools. Thus, it is aimed to eliminate the exam pressure that may occur in students. On the other hand, the courses that students are responsible for in TEOG are basically the same as SBS. Also, wrong answers do not affect the correct answers in this exam. The main reason for this situation is that the wrong answers do not affect the correct answers of the students in the exams they attend at schools, and the central assessments are not different from the written ones. In Table 3, the number of questions and weighted coefficients of the courses in TEOG are shown below.

Table 4: Number of Questions and Weighted Coefficients of Courses in TEOG

	Number	Weighted Coefficients
Turkish	20	4
Mathematics	20	4
Science	20	4
Religious Culture and Moral Knowledge	20	2
T.R. Revolution History and Kemalism	20	2
Foreign Language	20	2

(MEB, 2016)

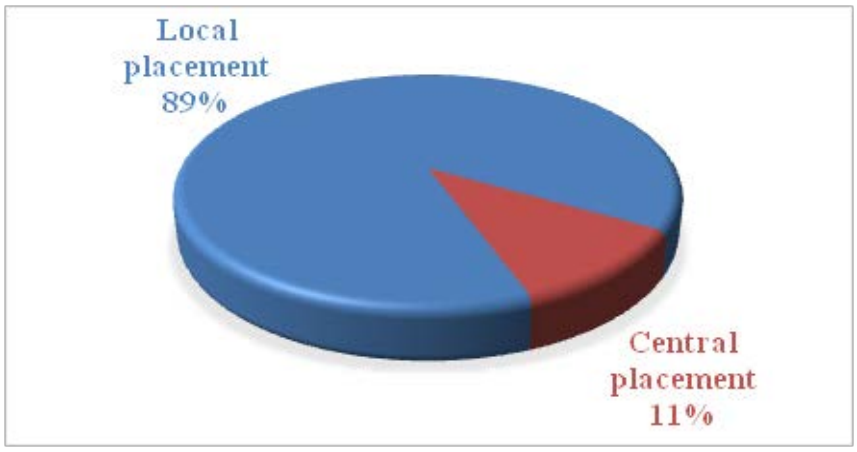
When the weighted coefficients of the courses in TEOG are examined in Table 4, it is seen that the coefficient of the Science course increased, unlike SBS while the coefficient of the T.R. Revolution History and Kemalism course decreased. It is seen that Turkish, Mathematics and Science courses are more significant in student placement. On the other hand, while 20% of the questions in the SBS are math questions, it was 16.6% in the TEOG exam. Giving additional points to students who were successful in the international science olympiads and mathematics olympiads held by TUBITAK (The Scientific and Technological Research Council of Turkey) also increased the importance of the mathematics course (MEB, 2016). As a result, private teaching institutions were closed in 2012 with a radical, important and positive decision, then the TEOG system was introduced in transition to secondary education and it was expected that there would be no need for private teaching institutions. TEOG was held as an achievement test. However, although the private teaching institutions were closed, TEOG, which all secondary school students were obliged to take, could not eliminate the need for exam preparation, and the closed private teaching institutions were replaced by other means. It was discussed that students taking an exam once in each term of the eighth grade and also the fact that there were too many students in the first rank might cause psychological problems and using TEOG for placement, which was an achievement test, was also criticized. Therefore, TEOG was canceled in 2017. It was announced that 90% of high schools will be placed based on the address and 10% will be placed by central examination (Atılgan, 2018).

LGS (High School Transition System)

With the change in 2017-2018, LGS was introduced instead of TEOG in transition to secondary education. However, the replacement of TEOG took place very quickly and the details of the system to be replaced were not clearly defined. Therefore, the stages of the new exam have shaped over time. This situation also negatively affected the communication between students, teachers, and parents (Aslan, 2021). With LGS, the optional examination system, held once a year, has been brought back. Also, the calculation of the raw score of each course test by subtracting one-third of the number of wrong answers from the number of correct answers for the relevant test was introduced again.

It is stated that both centralized examination and placement without examination can be made in the new placement system in secondary education institutions after the cancellation of the TEOG system. It has been announced that there will be an address-based placement without a central exam or exam result among the students who have completed secondary school (MEB, 2019b). After the announcement of LGS central exam scores, students are placed first according to their central placement scores and then according to the local placement system. In Figure 2, the percentages of the systems in which the students were placed according to the LGS placement results of the 2017-2018 academic year are given.

***Figure 2**: 2017-2018 Academic Year LGS Distribution of Students by Placement Types*



(Coşkun et al., 2020)

LGS is held in two sessions. In LGS, students attend two different sessions on the same day, in the morning and at noon. In the first session of the LGS central exam, tests consisting of verbal lessons were included. These are Turkish, Revolution History and Kemalism, Religious Culture and Moral Knowledge, and Foreign Language (English) tests. In the second session, tests are consisting of numerical lessons. These include science and mathematics tests. The achievements in the 8th-grade curriculum for each course are taken as a basis in the central examination (LGS). Questions that can measure students' reading comprehension, interpretation, problem-solving, analysis, deduction, critical thinking, scientific process, and similar skills are included (MEB, 2019c). In Table 5, the number of questions and weighted coefficients of the courses in LGS are shown below.

Table 5: Number of Questions and Weighted Coefficients of Courses in LGS

		Number of Questions	Weighted Coefficients
First Session	Turkish	20	4
	Religious Culture and Moral Knowledge	10	1
	T.R. Revolution History and Kemalism	10	1
	Foreign Language	10	1
	Total	50	
Second Session	Mathematics	20	4
	Science	20	4
	Total	40	

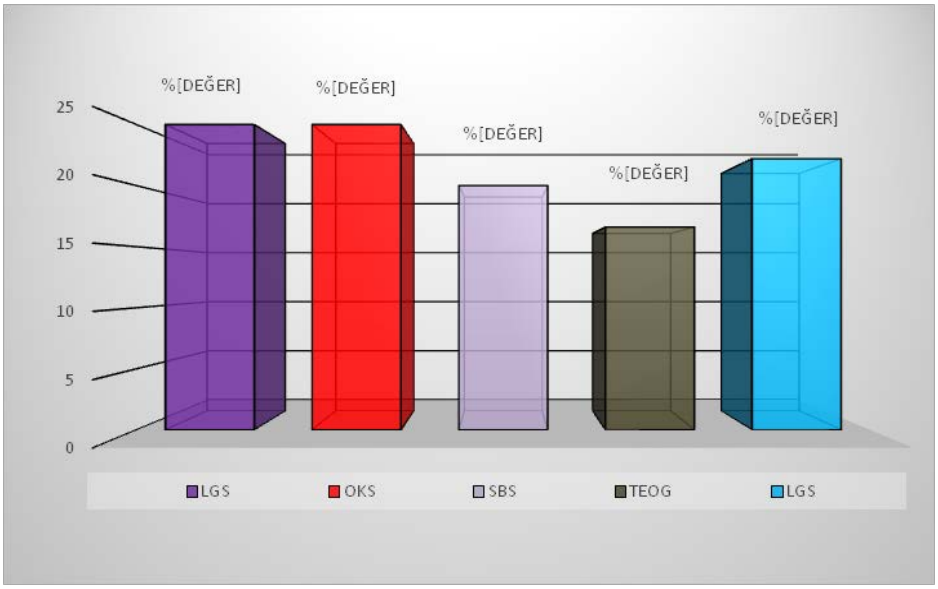
(MEB, 2019c)

When the weighted coefficients of the courses in LGS are examined in Table 5, it is seen that the coefficient of the T.R. Revolution History and Kemalism, Foreign Language, and Religious Culture and Moral Knowledge courses also decreased, unlike TEOG. It is also seen that Turkish, Mathematics, and Science courses continue to be more significant in student placement. On the other hand, while 16.6% of the questions in TEOG were math questions, 22.2% of them in the LGS exam are math questions. In LGS, held for the first time in 2018, the first session lasted 75 minutes and the second session lasted 60 minutes. However, as a result of feedback such as the fact that the skill-based questions asked in LGS were longer and more difficult than the previous exams, the duration of the second session, including the mathematics test, was increased to 80 minutes in LGS in 2019. It was seen that there is a positive relationship between the time given for solving questions in standard tests and student scores (Frisby & Traffanstedt, 2003).

Reflections of Changes on Math Questions

It is concluded from the examination of five different exam systems used for the transition to secondary education in the last 20 years that different systems have been practiced in terms of both the number of questions in the courses and the weighted coefficients of these tests. In Figure 3, the percentage of Mathematics test questions according to all questions in the exams is given.

***Figure 3**: Percentage of Mathematics Questions in Exams*



Considering both the ratio of the questions in the mathematics tests to all the questions and the coefficients of the mathematics tests, it is understood how important the mathematics lesson is in the transition to secondary education. From the perspective of the mathematics curriculum, it is seen that the questions in these exams are prepared by considering all learning domains. Students were tested in terms of numbers and operations, algebra, geometry and measurement, data processing and probability learning domains (MEB, 2018). With the questions in the Numbers and Operations learning domain, students are expected to be able to perform operations on natural numbers, integers and rational numbers and to solve problems related to them. It is aimed to solve algebraic expressions, identities, factorization, linear equations and quadratic equations and inequalities, and related problems in the algebra learning domain. In the geometry and measurement learning domain, it is expected to know the basic geometric concepts, the features of two and three-dimensional shapes and to solve the problems related to them. As for Data Processing, it is expected to prepare tables and graphs with appropriate data and interpret them. In the probability learning domain, it is expected to calculate the probable states of an event and the probabilities of events with different probabilities. National or international exams cover the achievements that are appropriate for the age of the students. The quality of the questions in the exams is also of great importance (Uğurel et al., 2012).

One of the main purposes of mathematics education is to develop the problem-solving skills of individuals (Baki, 2008). In order to provide students with problem-solving skills, they must first be left alone with the problem situations. To achieve this, the problems given in the class are important (Gök & Erdoğan, 2017). Some studies in the literature show that students have difficulties in non-routine problem solving (Çelik & Güler, 2013). All these situations should be considered in mathematics education.

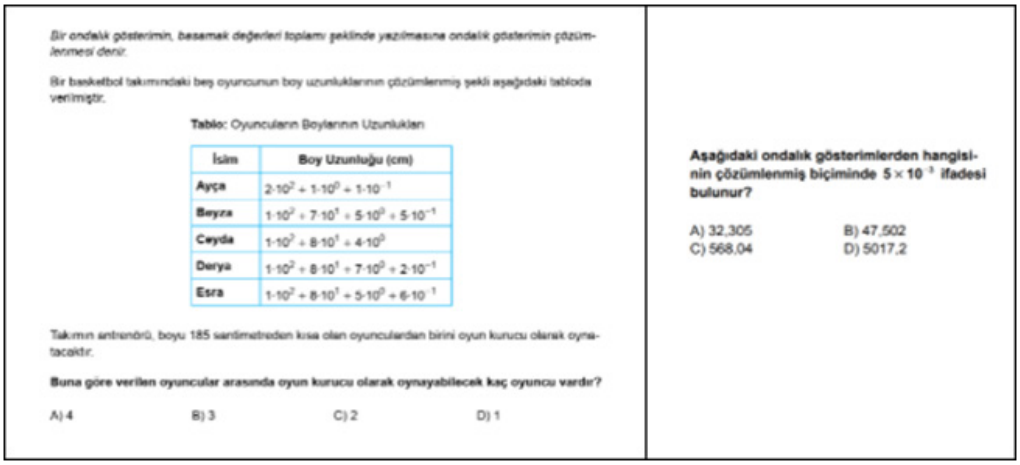
In the analysis of mathematics questions in SBS, it was seen that the questions generally

had an operational structure and were generally at low levels in terms of PISA proficiency level (İskenderoğlu et al., 2013). In a study investigating the opinions of primary school mathematics teachers, Durmaz (2009) revealed that views of primary school mathematics teachers' on SBS were generally positive and that the textbook was adequate in terms of SBS. It is seen that most of the questions in the TEOG exam are at levels 1 and 2 in terms of TIMSS levels, and very few questions are at level 4, which is a high level. According to Bloom's taxonomy, most of the questions were in the domain of application (Başol et al., 2016), more questions were asked in the cognitive domain of application, and fewer questions were asked in the cognitive domain of reasoning (Delil & Yolcu-Tetik, 2015). It is understood that the questions are generally composed of knowledge and practice levels and higher-level thinking skills are less involved (Çalışkan et al., 2018). Although the TEOG mathematics subtest is suitable for the mathematics curriculum, not all achievements in the curriculum could be measured in the exam (Bağcı, 2016). In their study, Mutlu and Akgün (2016) examined the relevance of mathematics questions to real life. They found out that while the ratio of mathematics questions asked in exams was 35% between 1998 and 2008, it was 61% between 2009 and 2013, which nearly doubled compared to previous years. They stated that while most of the questions asked about real life in the first years were in the domain of numbers and operations learning and the personal context, in the following years the questions spread to every learning domain and the questions asked in the social, professional and scientific context increased.

It is noticed in the analysis of question structures that LGS and PISA questions are similar to each other in terms of qualities such as problem-solving, analysis and reasoning. Yaprakgül (2019) stated that, as in PISA and TIMMS, the questions to be answered with logical thinking ability are more in 2018 LGS than in previous years, whereas Erden (2020) stated that the reference point of LGS questions is PISA. It is seen that the questions are adequate in measuring problem-solving, association and reasoning at a rate of 74%, and that the students prepare for LGS by solving the questions in exams such as PISA and TIMSS (Güler et al., 2019). Ekinci and Bal (2019) concluded that 60% of the questions in LGS are at the level of application and analysis, one of the higher-level cognitive processes.

Mathematics questions in LGS are different from exams in previous years. Long exam questions, multiple achievements and insufficient exam time have also become a topic of discussion. Some studies show that the difficulty and complexity of math questions in LGS can negatively affect students (Beyefendi, 2018). LGS and TEOG questions about the same achievements are given in Figure 3 (Resolving decimal representations of numbers using integer powers of 10) and Figure 4 (Writing mathematical sentences suitable for daily life situations involving inequality with a first-order unknown) below.

***Figure 3**: Sample Questions from LGS 2020 and TEOG 2016-1*



Bir ondalık gösterimin, basamak değerleri toplamı şeklinde yazılmasına ondalık gösterimin çözümlenmesi denir.

Bir basketbol takımındaki beş oyuncunun boy uzunluklarının çözümlenmiş şekli aşağıdaki tabloda verilmiştir.

Tablo: Oyuncuların Boylarının Uzunlukları

İsim	Boy Uzunluğu (cm)
Ayça	$2\cdot10^2 + 1\cdot10^0 + 1\cdot10^{-1}$
Beyza	$1\cdot10^2 + 7\cdot10^1 + 5\cdot10^0 + 5\cdot10^{-1}$
Ceyda	$1\cdot10^2 + 8\cdot10^1 + 4\cdot10^0$
Derya	$1\cdot10^2 + 8\cdot10^1 + 7\cdot10^0 + 2\cdot10^{-1}$
Esra	$1\cdot10^2 + 8\cdot10^1 + 5\cdot10^0 + 6\cdot10^{-1}$

Takımın antrenörü, boyu 185 santimetreden kısa olan oyunculardan birini oyun kurucu olarak oynatacaktır.

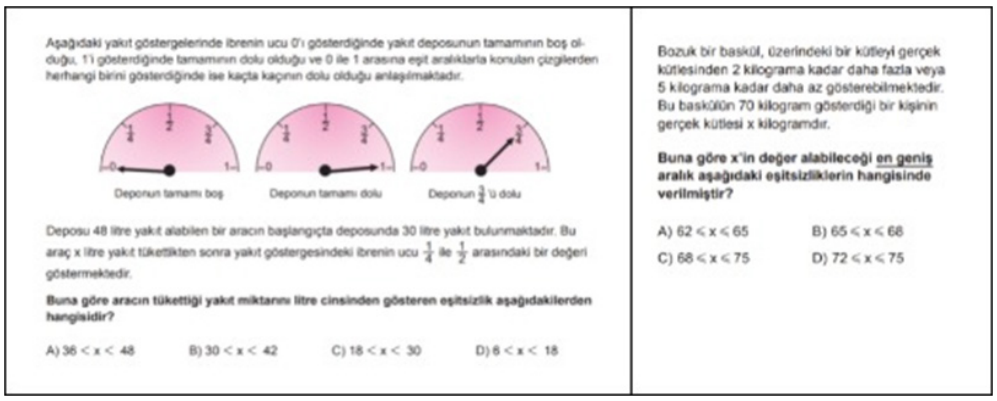
Buna göre verilen oyuncular arasında oyun kurucu olarak oynayabilecek kaç oyuncu vardır?

A) 4 B) 3 C) 2 D) 1

Aşağıdaki ondalık gösterimlerden hangisinin çözümlenmiş biçiminde 5×10^{-1} ifadesi bulunur?

A) 32,305 B) 47,502
C) 568,04 D) 5017,2

***Figure 4** : Sample Questions from LGS 2021 and TEOG 2016-2*



Aşağıdaki yakıt göstergelerinde ibrenin ucu 0'ı gösterdiğinde yakıt deposunun tamamının boş olduğu, 1'i gösterdiğinde tamamının dolu olduğu ve 0 ile 1 arasına eşit aralıklarla konulan çizgilerden herhangi birini gösterdiğinde ise kaçta kaçının dolu olduğu anlaşılmaktadır.

Deponun tamamı boş Deponun tamamı dolu Deponun $\frac{3}{4}$'ü dolu

Deposu 48 litre yakıt alabilen bir aracın başlangıçta deposunda 30 litre yakıt bulunmaktadır. Bu araç x litre yakıt tükettikten sonra yakıt göstergesindeki ibrenin ucu $\frac{1}{4}$ ile $\frac{1}{2}$ arasındaki bir değeri göstermektedir.

Buna göre aracın tükettiği yakıt miktarını litre cinsinden gösteren eşitsizlik aşağıdakilerden hangisidir?

A) $36 < x < 48$ B) $30 < x < 42$ C) $18 < x < 30$ D) $6 < x < 18$

Bozuk bir baskül, üzerindeki bir kütleyi gerçek kütlesinden 2 kilograma kadar daha fazla veya 5 kilograma kadar daha az gösterebilmektedir. Bu baskülün 70 kilogram gösterdiği bir kişinin gerçek kütlesi x kilogramdır.

Buna göre x'in değer alabileceği en geniş aralık aşağıdaki eşitsizliklerin hangisinde verilmiştir?

A) $62 \leq x \leq 65$ B) $65 \leq x \leq 68$
C) $68 \leq x \leq 75$ D) $72 \leq x \leq 75$

As can be seen from the examples in Figure 3 and Figure 4, the questions in LGS are more complex and longer than the questions in TEOG. It can be said that it requires more intensive interpretation and reasoning to solve the questions in LGS. Minister of National Education Selçuk (2019) stated that questions based on memorization are asked in LGS and said, *"There are questions that require skills such as interpretation, reasoning, critical thinking, reading comprehension, and deduction. The content of LGS actually contributes to the improvement of the education system. Because the perspective of the problem is changing. In the past, there was only the possibility of solving a question by memorizing the template of a question, but now reading comprehension has become such a priority that children constantly need to read books on topics they love."* In the study conducted by Güler et al. (2019), it was found out that the LGS questions were 74% adequate in measuring problem-solving, association and reasoning. However, in their study, Karakılıç and Arslan (2018) revealed that there was no significant relationship between students' book reading levels and their academic success in mathematics and problem-solving skills. The reason for this was shown as the fact that the students did not read the books consciously and with understanding. In the study conducted by Göktaş (2010), it was found that reading comprehension skills affect success in mathematics lessons. In another study, when the attitudes of students towards reading were examined, it was concluded that the grade point averages and school successes of the students who love to read are higher than the students who do not like to read (Yılmaz, 2012).

CONCLUSION

When the exams are evaluated as a whole, it can be said that each exam has strengths and weaknesses. For example, in OKS, students were responsible for all 6th, 7th and 8th-grade curriculum. Since SBS was held in 6th, 7th and 8th grades, it assessed the process of success, not the result, and it also has the feature of monitoring and evaluation, but taking the exam every year creates pressure and stress on students. In the TEOG system, taking the exam in their own school and make-up exams were found to be very useful, while taking the exam every semester in the last year and the fact that these exams were compulsory were considered their negative aspects. The questions in LGS, which replace the TEOG system, consist of skill-based questions similar to PISA questions. Instead of memorizing question patterns, it focuses on skills such as reading comprehension, analysis, synthesis, interpretation and reasoning. It is understood that process-based assessment of students and giving a single exam can increase students' anxiety and study load in LGS, as in SBS and TEOG systems. Also, the absence of a make-up exam in LGS is another discussion point. The low number of qualified high schools also creates a more intense competitive environment among students, which negatively affects them.

Remarkably, the mathematics questions are the determinant and elimination element of this exam. It is understood that the questions can be solved by students who have reasoning and judgment skills and read a lot of books. Although the question style given at the end of the unit in the textbooks and the question styles in LGS are quite different from each other, this is compensated by the sample questions published by the Ministry of National Education. However, textbooks must also be adapted to the current examination system. It is seen that the difficulty of mathematics questions creates anxiety in students (Pura, 2020). For students to answer the math questions in LGS correctly, they need to have reading comprehension skills, basic mathematical knowledge and processing ability, analytical thinking skills, logical thinking and judgment ability, problem-solving competence and the ability of knowledge transfer (Şıvkın et al., 2020). It was revealed by Yaprakgül (2019) that PISA questions require intuitive thinking, learning through invention, and are prepared about daily life problems, taking into account social problems and needs. It can be said that preparing students for the exam by solving PISA-style questions has been effective in increasing Turkey's mathematical literacy from 48th to 42nd place according to PISA results.

42.89% of the students in 2018 and 40.28% in 2019 did not answer the math questions (Erden, 2020). As a solution to this situation, the exam duration of the numerical lessons section was increased from 60 minutes to 80 minutes in 2019. In addition to extending the exam period, it may be useful to consider other reasons for not answering the questions. According to Erden (2020), solving mathematics questions in LGS requires the use of course achievements and many other skills together. Moreover, some experts in educational sciences criticize the face and construct validity of the questions (Gültekin,

2018). For example, while Turkish lesson questions are associated with Math, Science and other lessons, Math questions are associated with Turkish lesson achievements. While 450 words were used for math questions in TEOG exams, an average of 1200 words were used for math questions in the 2019 LGS exam (Erden, 2020). In the study conducted by Göktaş (2010), it was concluded that reading comprehension skills affect success in mathematics lessons. It will be useful to gain a reading habit, solve questions about daily life problems, make up basic mathematics deficiencies, and prefer modern teaching methods to provide students with the basic competencies required to correctly answer the mathematical questions asked in LGS.

It would be appropriate to plan the changes to be made in the future as a result of long-term and, if possible, pilot studies, taking into account the positive and negative aspects of the previous systems, and to explain this planning in detail to all educators and parents. The outcomes of the system designed as a result of long-term plans based on secondary and higher education will serve as a guide in terms of shaping Turkey's education policies.

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Chapter 13

DEVELOPMENTS IN THE FIELD OF SCIENCE EDUCATION IN TURKEY BETWEEN 2000-2020

DEVELOPMENTS IN THE FIELD OF SCIENCE EDUCATION IN TURKEY BETWEEN 2000-2020

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INTRODUCTION

The end of the 1900s and the beginning of the 2000s have been the years of rapid technological developments. In this century, space telescopes produced with advanced technology, irradiation research, facial and stem cell transplants, organs produced artificially with 3D technology, tools developed through nano technologies, artificial intelligence research, the discovery of new living species and discovery of gravitational waves, the longest duration on Mars, the construction of unmanned spacecraft that can last for a long time, the discovery of water on Mars, the production of robotic body parts, the discovery of treatment methods against the HIV virus, the production of heart tissue from skin cells, the discovery of the use of water as fuel, face transplantation, smart books, wireless internet and electronic mobile books and many other scientific developments attracted attention (Sakız, 2018). These rapid changes in science and technology, changes in the needs of the individual and society, developments and innovations in learning approaches have also affected the roles expected from individuals (Ayvacı, Er Nas, & Kirman Bilgin, 2020a). Therefore, this situation has led to changes in the understanding of teaching, in curricula and the training of teachers who are practitioners of these programs. In this context, the present study aims to examine the changes that took place between 2000-2020 in the approaches of science teaching and consequently the changes in science programs and in the education of science teachers.

Changes and Developments in Science Programs

When the science curricula (1924, 1926, 1931, 1937, 1938, 1948, 1969, 1974, 1977, 1983, 1992, 2000, 2005, 2013, 2017, 2018) from 1922 to the present are examined, it is seen that these programs have undergone many changes. These changes were sometimes rooted like the 2005 program and sometimes included minor revisions like the 2013 program. In this study, science teaching programs between the years 2000-2020 (2000, 2005, 2013, 2017, 2018) were examined.

2000 Primary School Science Curriculum

In this program, the name of the course remained as "Science" as in the 1992 program.

It has been stated that one of the goals of the program is to raise science literate individuals. One of the most basic features of this program is that besides the objectives, the acquisition dimension has been added to the program. Thus, the program focused on student acquisitions. However, according to the 1992 science curriculum, the subject domain was limited and subjects related to Kemalism were also included in the program. Biology in the sixth and eighth grades and physics in the seventh grade were included in the program (Çepni & Çil, 2015). Together with this, physics experiments were mostly included in this program, and it was stated that physics experiments could not be done adequately due to the insufficient duration of the course and the experimental materials at schools (Bozdoğan, 2003). The program is based on the concept of constructivism. The measurement and evaluation dimension, which was limited in the 1992 program, was given more importance in the 2000 program. It was emphasized that students should not be evaluated only with tests. Student observation forms, project and research assignments were also taken into consideration when making the evaluation. In this program, the use of various tools such as self- and peer-assessment, observation form was mentioned and sample forms were included (Ministry of National Education [MoNE], 2000). Therefore, it can be stated that the use of alternative assessment and evaluation tools is emphasized in addition to the use of traditional assessment and evaluation tools.

2005 Science and Technology Curriculum

The program has been prepared by taking into account the programs of countries such as the USA, Singapore, Ireland, Canada and the new developments in science education in the world. In the program, the name of the course was changed to "Science and Technology". The vision of the program is determined as raising all students as science and technology literate regardless of their individual differences. The spiral programming approach is taken into account in the program. In short, the subjects are given in a gradually expanding and deepening structure at each grade level, from the fourth to the eighth grade. The learning domains in this program are presented in Table 1 (MoNE 2005a, MoNE 2005b).

Table 1. 2005 Science and Technology Course Teaching Program

Learning Domains			
Knowledge	Skill	Attitude and Values	Science-Technology-Society-Environment (STSE)
Living Things and Life		Scientific Process Skills	Nature of Science Technology
Physical Phenomena			Relation Between Science and Technology
Matter and Change			Social and Environmental Context of Science and Technology
Earth and Universe			

When Table 1 is examined, it can be seen that the learning domains in the program are grouped under four main headings. These are: Subject Content (Living Things and Life, Physical Phenomena, Matter and Change, Earth and Universe), Skill Learning Domain (Scientific Process Skills), Attitude and Values, Science-Technology-Society-Environment (STSE). The subject content is oriented towards the acquisition of learning domain knowledge and expresses the basic subjects in science. Scientific Process Skills, Science-Technology-Society-Environmental gains, Attitude and Values, which are related to almost all science and technology subjects, are distributed in all units (Erduran Avcı & Önal, 2013). Emphasis was placed on teaching the subjects in this program by associating them with other disciplines. These associations are in the mode of in-class associations, associations with other lessons, Kemalism topics and connections with intermediate disciplines. While making in-class associations, the subject being taught was given by associating it with previous science subjects. While making associations with other courses, the subject was taught by associating it with disciplines such as mathematics and visual arts. While making associations with the subjects of Kemalism, the subject was tried to be associated with Atatürk's principles, reforms and thoughts. While making an associating with interdisciplinary disciplines, the subject was taught by way of associations with related interdisciplinary subjects such as “Disaster Protection and Safe Life”, “Human Rights and Citizenship”, “Entrepreneurship”, “Special Education”, “Sports Culture and Olympic Education”, “Health Culture”, “Guidance and Psychological Counseling” and "Career Consciousness" (Çil, 2020). Constructivist learning theory was adopted in this program. In measurement-evaluation, a performance-based measurement-evaluation approach has been adopted. The most striking aspect of this program is the strong emphasis on misconceptions. As an example, while some acquisitions were given, teachers were warned about possible misconceptions that might occur in students. With this program, teacher's guidebooks that will guide teachers in the learning-teaching process, and student textbooks and workbooks, that will help students, have been prepared. In the teacher's guidebooks, united annual plans, lesson plans prepared according to the 5E learning model, and all kinds of information and activity examples that teachers may need while teaching are included. Student textbooks, on the other hand, are prepared as the main source that students can benefit from while studying, and workbooks are prepared as a supplementary book with more activities. These are expressed as the strengths of the program. However, it was emphasized that the program has weaknesses as well as strengths. Some of these are as follows (Çil, 2020):

- The subject headings and student acquisitions in the program are quite high. Accordingly, it's an intense program.
- Although the understanding of constructivism is at the forefront in the program, when the program book, teacher's guide and student textbooks are examined, it is seen that the constructivist learning theory does not overlap with the philosophy.
- Although learning domains are provided under four main headings in the program, it has been observed that most of the acquisitions are in the domain of

cognitive learning, and very few acquisitions are related to the domain of attitude and values learning.

- Despite the emphasis on performance-based assessment and evaluation in the program, this understanding has not been reflected in practice.

2013 Science Course Curriculum

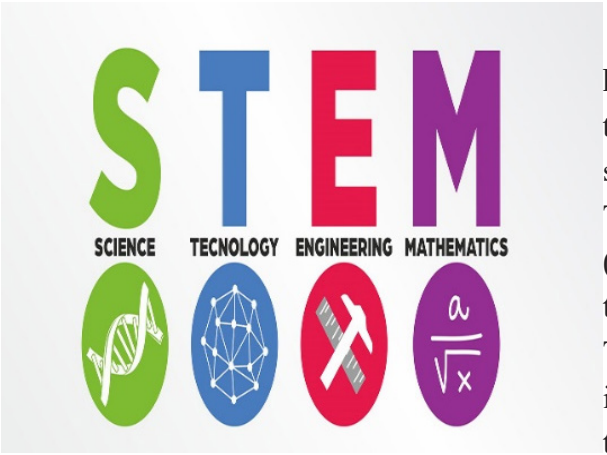
The program has been amended due to the aforementioned weaknesses of the 2005 program and the implementation of twelve years of compulsory education instead of eight years of uninterrupted and compulsory basic education since the 2012-2013 academic year. In this program, the name of the course was changed to "Science". This course has been taught since the third grade. Science courses were taught three hours a week in primary schools and four hours a week in secondary schools. Since the word technology in the 2005 program was removed in this program, the aims and objectives of the program have also changed. For example, instead of science and technology literacy, the term science literacy was used in this program and technology was expressed as a sub-dimension within science literacy. Instead of the constructivist theory view expressed in the 2000 and 2005 curriculum, a learning strategy based on research-inquiry philosophy has been implemented in this program. Thus, the guiding role of teachers has become more important and students are allowed to learn cooperatively in the learning process (Ayvacı, Er Nas, & Kirman Bilgin, 2020b). In addition, changes were made in the measurement and evaluation dimension and importance was given to the use of alternative measurement and evaluation techniques besides traditional measurement and evaluation techniques. In addition, emphasis was placed on self- and peer-assessment. In this program, the teacher's guide book and the student workbook were removed, and only the student's textbook was taught. The learning domains in this program are as given in Table 2 (MoNE, 2013).

Table 2. 2013 Science Course Curriculum

Learning Domains				
Knowledge		Skill	Affective	Science-Technology-Society-Environment
Living Things and Life	Scientific Process Skills	Life Skills	Attitude	Socio-Scientific Issues
Matter and Change		Analytical Thinking	Motivation	Nature of Science
Physical Phenomena		Decision Making	Value	Relation of Scienceand Technology
Earth and Universe		Creativity	Responsibility	Social Contribution of Science
		Entrepreneurship		Sustainable Development Awareness
		Communication and Team Work		Science and Career Awareness

It is observed when the learning domains of the 2013 science curriculum are examined that the knowledge learning domain consists of the subjects "Living Things and Life", "Physical Phenomena", "Matter and Change" and "Earth and the Universe"; skill learning domain consists of scientific process skills and life skills (creativity, decision making, analytical thinking, communication and teamwork, entrepreneurship); affective domain consists of motivation, attitude, value and responsibility; whereas the Science-Technology-Society-Environment learning domain consists of socio-scientific issues, sustainable development awareness, science and career awareness, relation of science and technology, the nature of science and the social contribution of science. Unlike the 2005 program, life skills have been added to the skill learning domain in this program, and the "attitude and value learning domain" was expressed as the "affective learning domain", while motivation and responsibility have also been included. Sustainable development awareness and socio-scientific issues were added to the science-technology-society-environment learning domain. "Career awareness" provided as an intermediate discipline in the 2005 program was included in the domain of science, technology, society and environment learning in this program. The "nature of technology" that was part of the domain of science, technology, society and environment learning in the 2005 program has been excluded from this learning domain in this program. While the strategies, methods and techniques to be given based on the theory of constructivism in the 2005 program are clearly stated in the program book, the learning theory of constructivism is not explicitly mentioned in this program whereas research-inquiry-based education is mentioned (Çil, 2020). The process of explanation and argument formation is also present in the research-inquiry process in addition to experimentation and discovery. In short, the application of the argumentation method has received significant importance in this program. Thus, the student will be able to express his/her thoughts comfortably, support them through different justifications, and create arguments against the claims of his/her peers (Eskicumalı, Demirtaş, Gür Erdoğan, & Arslan, 2014).

2017 Science Curriculum



Updating the 2013 science curriculum has become a necessity in 2017. One of the most important reasons for this situation is the inclusion of Science, Technology, Engineering and Mathematics (STEM) education to science education in the USA in 2001 (Zollman, 2012). Therefore, the most radical change made in the program is the inclusion of science, technology, engineering and mathematics understanding into the program. With this education, called STEM, it is aimed to enrich the physical, cultural and intellectual worlds of students and to develop their skills such as problem solving and critical thinking (Çorlu & Aydın, 2016). Thus, along with STEM

education, the student will acquire 21st century skills such as problem solving, creativity, cooperation and critical thinking (Özkan & Okur Akçay, 2021). Therefore, in order for the STEM teaching approach to be effective and efficient, students must be problem-solving, logical thinkers, innovative, creative, technology literate and self-confident (Morrison, 2006). In this context, the vision of this program was determined as raising science literate individuals (MoNE, 2017). However, the preparation and publication phase of this program differed from the teaching programs implemented so far. Namely, before this program was put into practice, it was published as a draft curriculum on the official website of the Ministry of National Education, making it accessible to the opinions and suggestions of the public and stakeholders, which was then put into effect in the 5th and 9th grades during the 2017-2018 academic year (Özcan & Duzcanoglu, 2017). The learning domains in this program are as presented in Table 3.

Tablo 3. 2017 Science Course Curriculum Learning Domains

Learning Domains					
Knowledge		Skill		Affective	Science, Engineering, Technology, Society, Environment
Earth and Universe	Scientific Process Skills	Life Skills	Engineering and Design Skills	Attitude	Socio-Scientific Issues
Living Things and Life		Analytical Thinking	Innovative Thinking	Motivation	Nature of Science
Physical Phenomena		Decision making		Responsibility	Science, Engineering and Technology Relations
Matter and Its nature		Creativity		Value	Relation of Science and Technology with Society
Science and Engineering Applications		Entrepreneurship		Universal Values	Sustainable Development Awareness
		Communication and Team Work		National Cultural values	Science and Career Awareness
				Scientific Ethics	

Table 3 shows that the 2017 science curriculum has some differences compared to the 2013 science curriculum. For example; “Science and Engineering Applications” unit has been added to the knowledge learning domain. This unit constituted the last unit of grades four, five, six, seven and eight. Scientific process skills and life skills as well as engineering and design skills (innovative thinking) have been added to the skill learning domain. Values are given importance in this program. Scientific ethics, universal and national cultural values have been emphasized. However, unlike the 2013 program, engineering was added to the fourth learning domain and this learning domain was expressed as "Science Engineering Technology Society Environment".

2018 Science Course Curriculum

This program was created by updating the science curriculum prepared in 2017. One of the most fundamental changes made in this program was renaming the "Science and Engineering Applications" in 2017 as "Science, Engineering and Entrepreneurship Applications". In other words, the development of entrepreneurship skills was given importance in this program. In this respect, "Science and Engineering Applications" included as the last unit in the 2017 program was not presented as a separate unit and instead was included as part of the "Science, Engineering and Entrepreneurship Applications" integrated to science subjects. Science, Engineering and Entrepreneurship Applications sub-learning domain includes the scientific processes such as defining a problem from daily life related to the topics in the units, choosing the appropriate alternative solution for this problem, planning and experimenting with the chosen solution, collecting quantitative and qualitative data, recording observations, presenting the product and presenting it with graphics or reading skills, and providing different strategies to market the product (MoNE, 2018). Therefore, in this program, students are expected to develop a product/products to meet a social need regarding the concepts they have learned within the scope of science, engineering and entrepreneurship practices, and to present these products at science festivals at the end of the semester (Deveci, 2018). However it was observed when the units and subject domains were examined that even though the subject domain of "Earth and the Universe" was ranked last in the 2013 curriculum, it was ranked first for all grade levels in the 2018 curriculum. In addition, one of the most important changes made in this program was the addition of innovative thinking skills under the title of "Engineering and Design Skills", which was added to the skill learning domain. Therefore, the most emphasized concepts in this program are the concepts of "engineering", "entrepreneurship" and "innovation", which are the requirements of the age we live in (Deveci, 2018).

Skills Included in the 2017 Science Curriculum

The skill learning domain in this program consists of "Scientific Process Skills", "Life Skills" and "Engineering and Design Skills".

Scientific Process Skills

Scientific process skills are expressed as basic skills that make the individual active in science, help them learn, and ensure that the acquired knowledge is permanent while providing methods for research processes in which the individual is responsible for his/her own learning (Çepni, Ayas, Johnson, & Turgut, 1997). In the current program, these skills are presented as skills that scientists use while working (observing, classifying, measuring, recording data, creating a model by using data, making hypotheses, experimenting, changing and controlling variables) (MoNE, 2018). It can be stated when these skills are examined that they are frequently used not only in learning-teaching environments, but also in solving problems encountered in daily life.

Life Skills (21st Century Skills)

In the 21st century, in which technological, economic and social developments are experienced intensely, importance is given to raising individuals who will contribute to these developments. In this respect, these individuals are required to have skills such as critical thinking, problem solving, creativity, risk taking, initiative and decision making (Gordon et al., 2009). These skills are expressed as life skills (World Health Organization, 1999) or 21st century skills (Trilling & Fadel, 2009). 21st century skills can be defined as the knowledge and high-level skills that individuals must have in order to adapt to the 21st century, which is called the age of science and technology (Dede, 2010). These skills were added to the science curriculum as of 2013. In the current science curriculum, these skills are expressed as decision making, analytical thinking, creativity, communication and teamwork, and entrepreneurship (MoNE, 2018). While decision making, analytical and creative thinking skills are included in problem solving skills; communication, teamwork and entrepreneurship skills are the skills necessary for people to exist in societies (Ayvacı, Er Nas, & Kirman Bilgin, 2020a).

Analytical thinking skills comprise the process of reaching a conclusion by performing operations such as comparing, classifying, and error analysis after collecting data about a problem, organizing and distinguishing data (Marzano & Kendall, 2007). Entrepreneurship skill, on the other hand, can be defined as revealing the needs of the society and contributing to the economy by turning these needs into business opportunities (Habila-Nuhu & Pahalson, 2014). Communication and teamwork skills are among the social skills and form the basis of life skills (Redecker & Punie, 2013). Decision-making skill is the selection of the most appropriate solution among many solutions for a problem (Grace, 2009). Creative thinking skill is the ability of individuals to develop new solutions to new problems by using their existing knowledge and to produce new products (Beers, 2011).

Engineering and Design Skills

These skills in the curriculum are expressed as skills that enable students to create products using their existing knowledge and skills and develop strategies on how to add value to these products by integrating science, technology, mathematics and engineering disciplines thus taking students up to the level of innovation and invention with an interdisciplinary approach to problems (MoNE, 2018). Engineering and design skills include "engineering skills", "problem solving skills", "reasoning skills", "association skills", "innovative thinking skills", "communication and cooperation", "life and career skills" and "creativity" (Ayvacı, Er Nas, Kirman Bilgin, & 2020a).

Considering these skills, reasoning skills are those that an individual must have in order to make inferences based on logic. Since engineering design-based activities are based around a problem, the individual must have problem-solving skills to solve this problem (English, King, & Smeed, 2017). Regarding the ability for association, the individual must have the ability to establish connections between the domains of science, engineering, technology and mathematics, both with each other and between disciplines. In engineering skill, the individual first makes a preliminary design for the solution of the problem. In this process, she/he creates a presentation with her/his drawings or models. Afterwards, the product development process ensues with the selected and supplied materials and continuous testing is conducted. Depending on the testing process, the product is developed or modified. Only an individual with innovative thinking skills can create an idea, process or product design. Because the important aspect of innovation is being able to put forth original thoughts by assimilating ideas. Creativity, which can be defined as different or original thinking and generating ideas, is the most frequently applied skill among engineering design-based applications. An individual who has communication and cooperation skills can express her/his thoughts with different methods and techniques, benefit from information and communication technologies, and work together with people who have different ideas. Engineering design-based applications also affect life and career skills. These skills will contribute to the lives of individuals by enabling them to gain the knowledge and skills that will affect their future professional lives and also to plan both their daily lives and their future careers (Ayvacı, Er Nas, Kirman Bilgin, & 2020a).

Changes and Developments in the Education of Science Teachers

The teacher training programs, which were restructured in 1997 and put into practice from the 1998-1999 academic year, were updated again in the 2006-2007 academic year (Higher Education Council [HEC], 2007). It was observed when the science teacher training program was examined from among these updated programs that the weight of the domain courses have remained approximately the same, and that the School Experience I and Introduction to the Teaching Profession courses have been removed from the first year. The last change in teacher training programs was made by HEC in 2018. It can be

seen when the science teaching undergraduate program in the new program is examined that there is a decrease in the content of the domain courses, while the choice and number of elective courses have been increased (HEC, 2018). However, it was concluded that the theoretical courses in the domain education have been reduced while the practices remained the same, that there was no change in theory and practice in the general culture courses, and that the vocational knowledge courses increased in theory over time, but decreased in practice (Ergun, 2020).

In 2008, the science and technology teacher special domain competencies were defined for the first time by the Ministry of National Education as five main competencies (planning and organizing the learning and teaching process, providing professional development, scientific, technological and social development, cooperation between school-family and society, monitoring and evaluation of development) and expressed as 24 sub-competencies within the scope of these five main competences (MoNE, 2008). However, it can be considered when these special domain competencies were examined that they do not overlap with current teacher competencies and do not meet the contemporary needs since they refer to the previous curriculum. Namely, in the current (2018) science curriculum, the skills that are desired to be acquired by the students in the Turkey Qualifications Framework are communication in native language and foreign language, digital competence, mathematical competence and basic competences in science-technology, social and civic competences, learning to learn, cultural awareness and expression, taking initiative and entrepreneurship. However, apart from these skills, the program also requires students to have the ability to use technology, entrepreneurship skills, and engineering-design skills (MoNE, 2018). Therefore, it is thought that science teachers who want to teach these skills to their students should first have these competencies, but science and technology specific domain competencies are not at a level to meet these requirements (Ergun, 2020).

CONCLUSION

The importance of raising individuals who will keep up with this century, that is, who will have 21st century skills, has increased in the 21st century in which scientific and technological developments are experienced very rapidly. Changes in the characteristics of the individual have also affected the understanding of science teaching, thus the science curriculum, and accordingly the education of science teachers who will train students with 21st century skills. In this respect, it can be said that there are some common features when science teaching programs from 2005 to the present are examined. It can be mentioned that these programs have a vision of raising science literate individuals, with the aim of teaching the four basic learning domains as knowledge, skills, affective and science-technology-society-environment; giving emphasis to the importance of concept teaching, adopting constructivist learning theory in the learning-teaching process; and giving importance to performance-based assessment and evaluation. However, regarding the constructivist approach in the 2005 Science program, and the inquiry-based approach in 2013 and 2018 science curricula, it can be said that student-centered approach is dominant in science curricula. In addition, there are some differences. As an example, it was observed that the 2005 and 2013 science curricula consist of four sub-learning domains: "Living Things and Life", "Physical Phenomena", "Matter and Change" and "Earth and Universe", and these units were taught in the same order in both programs. On the other hand, it is seen that the current (2018) Science curriculum consists of five learning domains: "Earth and Universe", "Living Things and Life", "Physical Phenomena", "Matter and Nature" and "Science, Engineering and Entrepreneurship Practices". On the other hand, while the "Living Things and Life" learning domain was handled in the first place in the 2005 and 2013 science curricula, it was observed that the "Earth and the Universe" learning domain was the first in the 2018 science curriculum. However, the learning domain, which was "Matter and Change" in other programs (2005 and 2013), changed to "Matter and Nature" in the current program (2018). The most important change made in the domain of knowledge learning in the 2018 science curriculum is the addition of the "Science, Engineering and Entrepreneurship Applications" sub-learning domain to this domain. By virtue of these applications, it is aimed that students make engineering applications related to science units, produce products and exhibit these products in science fairs, project exhibitions or science festivals. When the skill learning domains of these programs are examined, it is observed that only one single learning domain is given place in the technology program in 2005 which is scientific process skills; in the 2013 science curriculum, two learning domains, scientific process skills and life skills, were included, and in the current program in addition to these engineering and design skills added on the sub-learning domains. It is seen that the sub-learning domain of skills has been added. When the affective learning domains of the programs are observed and when the 2005 and 2013 science curriculums are compared, it is seen that the number of affective sub-learning domains has been increased, that is, the scope has been expanded. However, it is also seen that the affective learning domain has not been

included as a separate title in the current science curriculum, and that these sub-learning domains have been mentioned in the special objectives of the curriculum. It can be put forth when the Science-Technology-Society-Environment (STSE) sub-learning domains of the programs were examined that this learning domain is the learning domain that has undergone the most changes over the years. It can be indicated that the 2013 science curriculum is the program with the most advanced scope in terms of the dimensions in which the STSE learning domain was developed and added. It is seen that STSE is not included as a learning domain in the current science curriculum, but it is only mentioned superficially in the special aims of the program. In addition, the current science curriculum has emphasized the inquiry-based learning approach with an interdisciplinary perspective. However, it can be said that the emphasis between disciplines is very superficial, that is, the absence of an expression that puts the STEM approach forward in the current (2018) science curriculum, is one of the important shortcomings of the current curriculum. Even though there is an emphasis on bringing together four important disciplines such as science, engineering, mathematics and technology in STEM education, it is seen that the new program emphasizes the concepts of science, engineering and entrepreneurship, but not sufficiently emphasizing the technology and mathematics disciplines. Besides this, the reduction of theoretical courses in domain education in the current (2018) science teaching undergraduate program, may make us encounter difficulties in raising students having skills for the 21st century as the special domain sufficiency of the science and technology teachers determined by the Ministry of Education might be insufficient in the frame of the Turkey Capabilities Frame for meeting the skills that are expected to be acquired by the students.

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Chapter 14

HOW WAS EDUCATION AFFECTED BY THE COVID-19 PANDEMIC IN THE WORLD AND IN TURKEY?

HOW WAS EDUCATION AFFECTED BY THE COVID-19 PANDEMIC IN THE WORLD AND IN TURKEY?

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INTRODUCTION

In this chapter, the impact of the Covid-19 pandemic, which has affected the whole world, on education will be discussed. In the first part of the article, brief information about the pandemic is given. In the second part, data on how the education process is managed in the world under the effect of the pandemic has been shared. For this purpose, the educational policies implemented during the pandemic period, specific to country examples, were conveyed. In the third part, graphics about the course of the pandemic in Turkey and the table about the chronology of the pandemic in Turkey are given. In the chronology, certain events and their dates are limited to be directly related to education. In the last part, the education policies implemented during the pandemic period in Turkey were discussed.

What is COVID-19?

The new coronavirus (Covid-19) is a virus that emerged in the last months of 2019 in the Wuhan province of China and was identified by researchers on January 13, 2020. The virus first appeared in a seafood and animal market in Wuhan province, from where it spread to the rest of the world. The disease generally puts people over the age of 60 and those with some chronic diseases at risk (TR Ministry of Health, 2020). In this process, countries have given similar reactions to Covid-19. In order to prevent the spread of the virus, places such as schools, cafes, gyms and places of worship have been closed or restricted in many countries. Businesses closed down or had to change their working hours. Support packages were presented for people who lost their jobs (Aysan, 2020, p. 677). Many governments facing this epidemic, instructed institutions to stop face-to-face meetings and to switch to distance education for educators, as a result of this, there have been situations where it was necessary to switch from face-to-face education to distance education overnight. (Daniel, 2020, p. 91).

The emergence of new mutations of the coronavirus has created new challenges in fighting against the epidemic. The World Health Organization (WHO) has described the Alpha, Beta, Gamma and Delta variants as worrisome. What is worrying is that these mutations can increase infectivity and lethality, alter disease symptoms, and reduce the effectiveness of prevention and control measures. (Aytekin, 2021). As a result of these developments, it is expected that there will be changes in the practices of the governments during the

pandemic period.

With Covid-19, apart from epidemics that were limited to local effects such as Ebola, for the first time, it was faced with a pandemic that affected the entire world, including developed countries. When previous researches and reports are examined, it has been predicted that the globalizing world will face more epidemic diseases and these diseases will affect all societies (Budak and Korkmaz, 2020, p. 75).

The Course of Covid-19 in the World

In this section, information will be given about the education policies carried out in the world during the pandemic period. For this purpose, it is presented how the pandemic passed in particular countries and what educational policies were put forward in this period. While selecting the countries, data richness was tried to be provided. For this purpose, attention was paid to select countries from different parts of the world.

China

On January 23, 2020, the city of Wuhan was put in strict quarantine. This quarantine covered 11 million people. Afterwards, quarantine practices spread rapidly to the remaining parts of China. However, widespread testing practices in the country also attracted attention. (BBC News Turkish, 2021a). In China, patients with Covid-19 were isolated in certain hospitals, and hospitals were rapidly built in areas with increasing cases. The rapid implementation of measures such as quarantine, social distance and isolation has produced beneficial results in China (Tekin, 2020, p. 337).

Chinese has been the target of criticism from international actors related not announcing the coronavirus to the world early in the covid-19 period and on a few other issues. For instance, according to the news of BBC News Turkish (2021b), the team formed by the WHO was prevented from entering China in January 2021. WHO described this situation as a disappointment. A team of ten people was expected to enter the city of Wuhan, where the epidemic began, and conduct research on the origin of the coronavirus. However, the WHO team entered China a few months later in April 2021 (NTV, 2021). Most of the criticism against China came from the USA. One of them is the statement made by Mike Pompeo, "I can show you a lot of evidence that the coronavirus spread from laboratories in Wuhan." Donald Trump, who made a statement a week before Pompeo, stated that he saw the evidence that the coronavirus spread from the laboratories in Wuhan, but that he would not share the details at that time (Milliyet, 2020a). One of the most up-to-date sources of accusations against China is the US intelligence agency's report on the source of the virus. In May 2021, US President Joe Biden instructed intelligence agencies to prepare a report that would lead to definitive conclusions about the coronavirus. The report was mainly based on two claims. One of these is the claim that coronavirus is naturally transmitted from animal to human. A low confidence label is used for this claim

in the report. The second claim is that the coronavirus was accidentally leaked from the Institute of Virology in Wuhan. In the related report, the moderate confidence label is used for this claim. China, on the other hand, defended itself by declaring the published report as unscientific (BBC News Turkish, 2021c). A similar accusation against China by the USA was made from China to the USA shortly before the publication of the US intelligence report. According to this accusation, it has been suggested that the new coronavirus spread to the world from a military base in the USA. The claim made by Chinese sources has taken its place in the news sources, where it has become increasingly popular in China. (Hürriyet, 2021).

When the education policy of China during the pandemic period is examined, it is seen that they switched to distance education when the schools were closed. At the beginning of the epidemic, the education made with video recording on television was later shifted to online environments where teacher-student interaction and student-centred applications were made. Additionally, efforts were made to increase the effectiveness of education by giving responsibility to parents. The main slogan of education in China during the epidemic period was "School's Out, But Class's On" (Yaman, 2021, p. 3303).

United States of America

The first case in the United States was identified on January 21, 2020, in Washington state. Subsequently, cases were also seen in the states of Chicago and California. In January and February, all foreign-related cases continued to appear. The first death due to covid-19 in the USA occurred on February 29, 2020, in Kirkland, Washington state. Towards the beginning and middle of March 2020, the virus started to spread rapidly in the USA (Baker at all, 2020).

On March 13, 2020, US President Donald Trump declared a national emergency to prevent the spread of the Covid-19 pandemic in the United States. This has led to the closure of schools, bars, restaurants and cinemas. Besides, a number of other measures have been introduced to prevent mass activities conducted by more than 50 people and increase social distance. In addition, companies were asked to direct to remote teleworking (Chowell and Mizumoto, 2020, p. 1093).

The USA has been one of the countries that allocates the most economic resources in the fight against Covid-19 in the world. According to the news of BBC News Turkish (2020), the President of the USA announced an aid package of 2 trillion dollars in March 2020. There were issues such as helping the sectors most affected by the epidemic, providing cash aid to families, providing loans to small-scale businesses and financial support to health institutions within the scope of the package. According to the news of the Anadolu Agency (Baykan, 2021), another $ 1.9 trillion covid-19 support package was signed by the US president in March 2021, approximately one year after the 2.4 trillion dollar aid package. The scope of this package included providing cash assistance, supporting local

governments and states, and supporting vaccine distributions.

As a result, the United States has been one of the hardest-hit countries by the Covid-19 pandemic. According to statistics from the WHO, (2021a) as of September 1st, it was among the countries most severely affected by the pandemic, with nearly 39 million confirmed cases and more than 634,000 deaths.

Schools continued with a cycle that opened and closed according to the epidemic course in the USA. At this point, due to the autonomy of local decision-makers, whether schools were open within the scope of the states varied. For this reason, it has become difficult to collectively describe the educational course of the whole United States in the epidemic. According to the TEDMEM (2021, p. 13) report, there are 48 countries in the world where schools are not fully open in the first year of the pandemic, one of which is the United States.

Examining the 2021 Student Achievement Plan launched by the mayor of New York and the chancellor of New York schools to compensate for the learning losses experienced during covid-19 will help us understand epidemic-era education policies in the United States. According to the article on the news site Abc7NY, (2021) the plan includes issues such as identifying learning losses, preparing a digital curriculum, involving parents in the process and compensating for the psychological effects of the epidemic.

Canada

The first case of Covid-19 in Canada was identified on January 25, 2020. A state of emergency was declared in Quebec on March 12, 2020, and in the Nova Scotia region and other regions on March 22. The Canadian government has imposed some travel restrictions as of March 14, 2020 due to the increasing number of cases. As of March 16, access to the country has been restricted. As of March 12, educational institutions were closed and various closure measures were implemented (Selçuk, 2020, p. 89). Schools in Canada opened in September 2020 after being closed for as long as seven months. Schools started hybrid education in the new period, the number of courses decreased and was supported by distance education. Another practice in Canada during this period has been the appointment of a paramedic to each school. The relevant paramedic is assigned to check the case status at the school where he/she is assigned and to identify the cases. In addition, these officials supervised the implementation of pandemic rules at the school. In Canada, the inadequacy of physical facilities in public schools in implementing pandemic measures has been instrumental in parents directing students to private schools (Acar, 2020).

United Kingdom

The government has announced a £330bn aid package to fight against the economic impact

of the Covid-19 pandemic. Accordingly, the pandemic was seen as an emergency and it was emphasized by the government that businesses such as airlines and accommodation companies are under threat. Furthermore, information has been shared with the public that the amount will be increased if this assistance is not enough (BBC, 2020). The assistance announced by the government generally covers business owners who use credit, small business owners, self-employed people and members of many other sectors. Within the scope of the package, practices such as the landlords' inability to evict their tenants for 3 months, and the postponement of the used loans for 3 months have been put forward. (GOV.UK, 2020) Schools in England, which have been closed for two months, started education in a controlled manner on March 8, 2021, with the opening of all primary schools and the gradual opening of other levels. United Kingdom has also been one of the countries keeping schools open intermittently. The latest opening meant that students returned to school for the fourth time since the beginning of the pandemic. (BBC News Turkish, 2021d).

Russia

Russia's introduction to the new coronavirus took place on January 31, 2020. The first coronavirus-related death occurred on March 19, 2020. (Chirciu, 2021) Decisions regarding educational institutions in Russia are taken at a federative level and it is seen that very strict measures are not taken in schools. It is seen that the measures taken are limited to measuring fever and limiting parents' access to school. Most of the schools continued face-to-face education in the pandemic. Besides, as some parts of the country face infrastructure problems while transitioning to online education, various disruptions have occurred. (Anadolu Agency, 2021). In Russia, where the practices related to the closure of schools appeared later, the last bell, which is a tradition and rings on the day the schools close in May, had to ring in digital classroom environments in May 2021. (Sputnik, 2020).

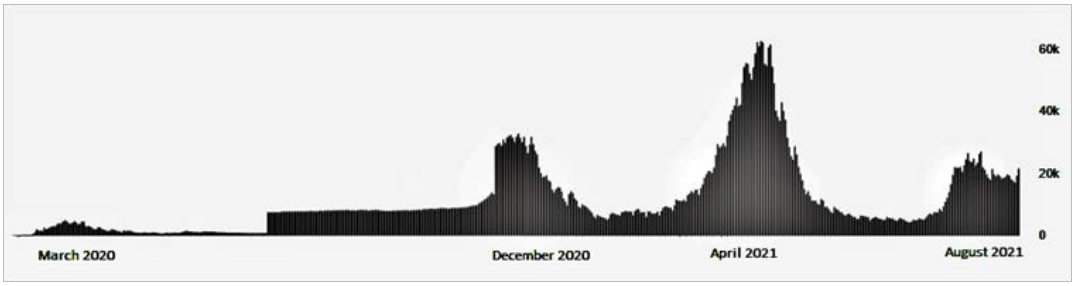
Australia

The first new coronavirus case in Australia was seen on January 25, 2020. (Ministers Department of Health, 2020). In Australia, where the economic impact of the pandemic is being felt strongly, it has been shared that the stimulus package planned for the fiscal year 2020-2021 will cause a huge deficit in the country's economy. Regarding long-term economic problems, the Australian government's Intergenerational Report 2021 foresees that the economic effects of the epidemic will last for 40 years (Pandey, 2021). In August 2020, a state of disaster was declared for a state. In the same time period, while a lockdown was declared on Sunday evening in some states, schools across the country were closed for face-to-face education and distance education was started. (Euronews, 2020). Exactly one year later, in August 2021, it was reported in the media that schools were closed again due to increasing cases (TRT News, 2021).

The Course of Covid-19 in Turkey

In this section, the course of Covid-19 in Turkey will be examined by presenting a graph of cases and deaths. In the continuation of the chapter, important developments in education in the pandemic will be presented in chronological order.

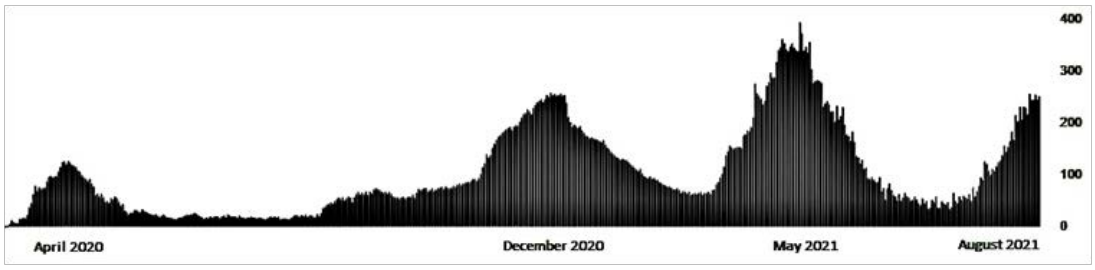
Figure 1. *Graph of Covid-19 Cases in Turkey*



WHO. (2021b). WHO coronavirus (covid-19) dashboard. Accessed from https://covid19.who.int/region/euro/country/tr.

The graph seen in Figure 1 is a graph of the number of cases in Turkey taken from the WHO's website. When the graph is examined, it is seen that after the first case was seen in March 2020, it continued on a certain course and peaked at three points. The highest peak in the number of cases was seen in April 2020. When the decrease in the number of cases in the graph is examined, it can be seen that the applied restrictions are effective. When evaluated in general, it is among the comments that can be understood from the graph that the cases decreased in the summer months.

Figure 2. *Graph of Covid-19 Deaths in Turkey*



WHO. (2021b). WHO coronavirus (covid-19) dashboard. Accessed from https://covid19.who.int/region/euro/country/tr.

The graph seen in Figure 1 is a graph of the number of deaths in Turkey taken from the WHO's website. When the graph is examined, it is seen that the death numbers are fluctuating. It is also noteworthy that the death numbers, in general, peaked four times. It can be said that these peaks took place in April and December of 2020 and May and August of 2021. In general, it can be asserted that the number of deaths decreased as the number of cases decreased as a result of the restrictions.

Seeing the impact of Covid-19 on education in Turkey as a timeline would be helpful in monitoring the course of education policy. Table 1 has been created for this purpose. Important dates are shown in the first column of the table, developments occurring on this date in the second column, and the source of this development is shown in the last column.

Table 1. Timeline of the Course of the Covid-19 Pandemic in Turkey

Date	Case	Source
March 11th, 2020	The first case of coronavirus was seen in Turkey.	(TRT News, 2020a)
March 16, 2020	One week of primary and secondary education and three weeks of university holidays have started. Then this holiday was extended.	(Anadolu Agency, 2020)
April 3, 2020	Lockdown is declared for people under the age of 20.	(T.R. Ministry of Interior, 2020a).
April 9, 2020	Distance education in-service training program for teachers has started.	(Ministry of National Education, [MNE] 2020a)
May 4, 2020	Some freedoms have been imposed on the lockdown for citizens under the age of 20.	(TRT News, 2020b).
May 29, 2020	It was announced that private preschool institutions could be opened as of June 1, 2020.	(MNE, 2020b)
June 1, 2020	It has been announced that private schools could start face-to-face compensation training from 15 August 2020.	(MNE, 2020c)
June 2, 2020	It has been decided that public preschool institutions can remain open until June 19, 2020.	(MNE, 2020d)
June 18, 2020	A partial lockdown was imposed during the LGS sessions on June 20, 2020 and the YKS sessions on June 27-28, 2020.	(T.R. Ministry of Interior, 2020b).

July 3, 2020	It was decided that the new academic year would start on August 31, 2021, with distance education, and that schools would be opened gradually, first at the preschool and first-grade level and then at other levels.	(TRT News, 2020c).
November 18, 2020	Lockdown for under-20s have been imposed with certain freedoms.	(T.R. Ministry of Interior, 2020c)
August 15, 2021	It was announced by the Higher Education Council that preparations were made for universities to start face-to-face education in the 2021-2022 academic year.	(Higher Education Council, 2021).
August 19, 2021	The Minister of National Education announced the start of face-to-face training at all levels on 6 September 2021.	(MNE, 2021a)
September 5, 2021	It was announced that the students in the class, which had two cases in ten days, would be considered contacted and that class would pass to distance education during the quarantine process.	MNE, 2021b

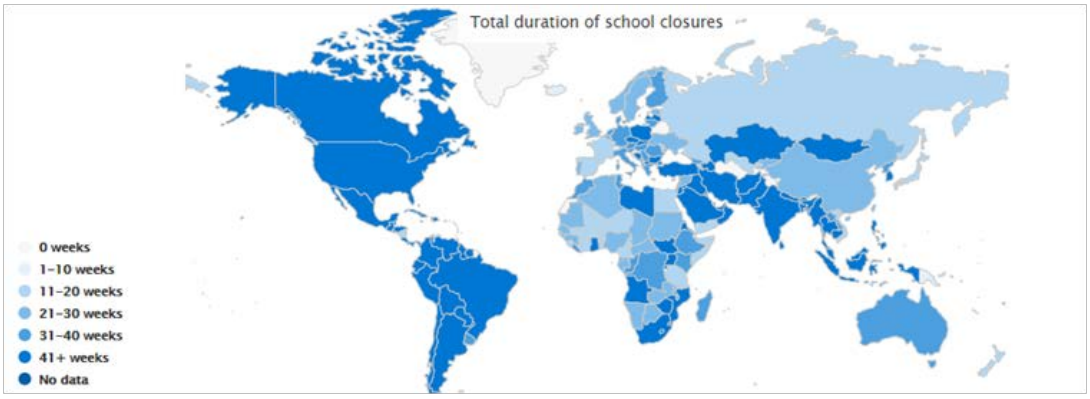
When Table 1 is examined, it is seen that education policies related to the pandemic were implemented shortly after 11 March 2020, when the first case was seen in Turkey, and in this context, schools were first pass to distance education. It can be said that the lockdown imposed on under-20s in Turkey also affects the education process. Because school-age people were subjected to a mandatory quarantine, they continued their education at home in the process. Thus, there was a process in which students stayed at home for a long time and continued home education. It is also among the practices of this period that teachers' in-service training is carried out with distance education in order not to be interrupted during the pandemic process. It is seen that the other effect of the pandemic is the postponement of the central exams. With these postponements, millions of students who will take the exam have been subjected to another effect of the pandemic. As seen in the table, compensation training programs have been implemented to eliminate the inevitable learning losses during this period. When the policies for the 2021-2022 academic year are examined, it can be said that more decisive practices have been put forward for the start

of face-to-face education. It can be asserted that the elimination of the vaccine problem contributed to this.

Education in the Shadow of Covid-19

Education systems affected by the Covid-19 pandemic have generally turned to emergency practices for today while also sought to produce solutions for the future (TEDMEM, 2020). The first of these solutions was to close the schools to face-to-face education. Much of the world has kept schools closed for a long time. According to UNESCO [United Nations Educational, Scientific and Cultural Organization] (2021), the duration of school closures in the world from the beginning of the pandemic to the present day -- September 2020 – is shown on the map below.

Figure 3. *Periods When Schools Around The World Remain Closed (Week)*



UNESCO. (2021). Education: from disruption to recovery. Retrieved from https://en.unesco.org/covid19/educationresponse#schoolclosures

When the map in Figure 3 is examined, it is seen that the majority of the world keeps schools closed for at least 31 weeks. In Turkey, schools remained closed for a total of 49 weeks from the first date of school closure until September 2021 (UNESCO, 2021). The reopening periods of each country after the schools are closed and how the education processes continue when the schools are closed varies. When evaluated in terms of Turkey, with the onset of the covid-19 epidemic, schools were closed on March 16, 2020, first temporarily, then until the end of the term, and pass to distance education. (Milliyet, 2020b). After this time, the education and training in the schools affiliated with the Ministry of National Education were started to be carried out through the Information Network (EBA) and some channels of TRT, and the central exams were postponed (Can, 2020, p. 27). EBA, which was established to provide communication between teacher and student and to store auxiliary materials, was broadcast on 18 different channels during the pandemic period with TV screening and six different channels were allocated for each level of education. Twenty-minute lessons are shown on these channels, which are called EBA TV. Thus, EBA has operated in both TV, internet and smartphone applications (Duban and Şen, 2020, p. 360).

About a week after the majority of universities closed, it provided a rapid pass to open and distance education and continued its education. This rapid transition required universities to implement the teaching system in which they will carry out distance education within a week, as well as to provide auxiliary documents, videos, etc. to both faculty members and students about how to use this system. These distance education practices were realized in asynchronous, synchronous or mixed form according to the infrastructure of universities (Durak, Çankaya and İzmirli, p. 2020, 792).

The distance education process has led to different suggestions in the literature on the fight against the pandemic in education. Bozkurt (2020, p. 128-129) specifies proposals such as a balanced presentation of online and offline courses in distance education, the implementation of measurement and evaluation applications based on the process, planning data-driven roadmaps, the development of digital skills, social justice, social equality, and fighting against the trauma of the process while fighting against covid-19 in the field of education.

One of the long-term effects of the pandemic on education is learning losses. While research into learning losses has so far focused on school closures as a result of holidays and natural phenomena, a new and major learning loss has been raised around the world due to the fact that schools have been closed for a long time, leading researchers to this problem. In the report titled TEDMEM (2021) *Turkey's Compensation Education Roadmap,* one of the important sources for this purpose, it was foreseen that due to pandemic period learning losses, students' PISA performance will decrease, the next generation will lose income, and total education time will decrease. In the same report, it was emphasized that all partners should work together to compensate for learning losses and that more evaluation data is needed. The data of the report titled *Learning Loss Detection and Recommendations during the Pandemic Period* published by Eğitim Bir-Sen is also noteworthy for our better understanding of learning losses (Eğitim-Bir-Sen Center for Strategic Studies, 2021). According to the report, about half of teachers stated that they were teaching live every day, and the number of teachers who said that all of the students participated in the live lesson was limited to 5 and 7 percent. The majority of teachers stated that they aimed to close the learning gap by sending documents to students who did not participate in the course.

It is also thought that it will be useful to take a look at other studies that cover the education process together Covid-19 in Turkey. In relation to this, Görgülü Arı and Hayır Kanat (2020) examined the opinions of social studies and science teachers on Covid-19. Pınar and Dönel Akgül (2020) aimed to determine the opinions of secondary school students who took science courses with distance education during the pandemic period. A study that focuses on providing partner diversity to the process has been put forward by Başaran and others (2020). The research aims to determine the opinions of students, parents and teachers on the effectiveness of distance education applied during the pandemic period. Ezer and Aksut (2021) focused on EBA in their studies and aimed

to determine the opinions of social studies teachers to use EBA during the pandemic period. Other research examining the opinions of high school teachers regarding EBA use was put forward by Türker and Dündar (2020). Çakın and Külekçi Akyavuz (2020) conducted a study in which they consulted teacher opinions on what problems the process brings. When the studies are evaluated, it is seen that the weight is research carried out by interview method. Although experimental research seems to be lacking at this point, it can be said that this is due to the difficulties caused by the pandemic.

CONCLUSION

The Covid-19 pandemic has affected the entire world in almost every area. Education is also one of the areas exposed to this effect. Education has passed to distance education due to measures such as social distancing, which is required by the epidemic all over the world. With distance education, the importance of access to education, infrastructure, digital qualifications of educators and students has increased. Everyone has a duty to reduce the negative effects of the pandemic on education. At this point, data-driven projections and support training packages should be created. Education politicians, school administrators, teachers, parents and students should work collaboratively to get through this process with less harm.

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Chapter 15

SOCIAL STUDIES COURSE AND THE ENVIRONMENTAL EDUCATION

SOCIAL STUDIES COURSE AND THE ENVIRONMENTAL EDUCATION

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INTRODUCTION

The Environment

The environment is the physical, biological, social, economic, cultural and natural atmosphere in which people and other living things maintain their relationships and interact with each other throughout their lives (Çevre Kanunu, 1983). The environment, which can be expressed as the habitat of the living beings, is a concept that covers all living and non-living elements related to the individual in ecological terms (Kışlalıoğlu and Berkes, 1993). In this respect, the basic elements of the environment can be listed as follows:

- All living beings, including humans,
- Non-living beings,
- All elements of physical, chemical, biological and social nature that affect or may affect the actions of living beings (Karatekin, 2011).

The environment has a great meaning for living beings and includes the relations between human beings and other living species such as plants and animals, as well as relations with inanimate elements such as air, water, soil, underground resources and climate (Karataş and Aslan, 2012; Keleş, Hamamcı and Çoban, 2009). The structure of the environment, including both living and non-living elements, reveals the concepts of natural and artificial environment, which are two different types of environment.

The natural environment can be defined as a structure that the human influence is not seen and does not undergo a rapid change. People, in daily lives, use the elements of the natural environment effectively and show a structure that consumes the resources of the natural environment. At this point, the artificial environment can be defined as the natural environment modified or transformed by means of the human influence and technological activities, economic and social activities (Ertan, 1991). The natural and artificial environment contains the basic environmental elements and constitutes a basic living space for humans and other living life forms. Through the human element, the natural and artificial environments are in a constant interaction.

The encompassing nature of the environment has required human beings to act together in every aspect of their lives. Humans have been benefitting from their environment and nature for various purposes, and have also caused consumption in resources. Particularly, the rapid consumption and accessibility, which has increased with the effect of the technological developments and globalization, play an important role in the creation of resource waste. This waste has brought the unaware consumption of environmental resources within itself. The environmental problems such as the waste of resources as well as the global warming, the climate change, the extinction of species, running out of energy sources, inability to control the waste, energy of resource depletion, the reduction in the agricultural areas, nuclear hazards, the rapid population growth are emerged (Borden and Francis 1978; Kışlalıoğlu and Berkes, 1993). Considering the negative results of the interaction between human and nature, a negative relationship can be seen between the two. The gradual expansion of the boundaries of the artificial environment created by human has brought about the disappearance of the natural environmental elements. On the one hand, the natural environment is being narrowed; on the other hand, the artificial environment is being expanded (Ertan, 1991). The results of this struggle of human against the environment create the necessity of leaving a healthy natural environment to future generations. And thus, this situation has made it even more important to inform the future generations that the artificial environment is gradually expanding its sphere of influence and to impose the importance of protecting natural environmental elements (Dinçer, 1999).

In order to prevent the environmental problems, human activities and behaviours should be focused on the environmental awareness. The environmental education also plays an important role in raising the individuals who are sensitive to the environment and actively participate in protecting environmental resources. As it is known that humans are the living beings that degrade the environment and consume resources, the need for activities to eliminate these negative behaviours has emerged. Because of the fact that an individual environmental education will bring a broad social education, the need for environmental education is increasing in protecting and developing the elements of the natural environment and ensuring sustainability. Raising environmental awareness by making use of educational opportunities is an important step for an effective environmental education in order to know and understand the problems that people will encounter in case of deterioration of the natural and artificial environment (Güney, 2003).

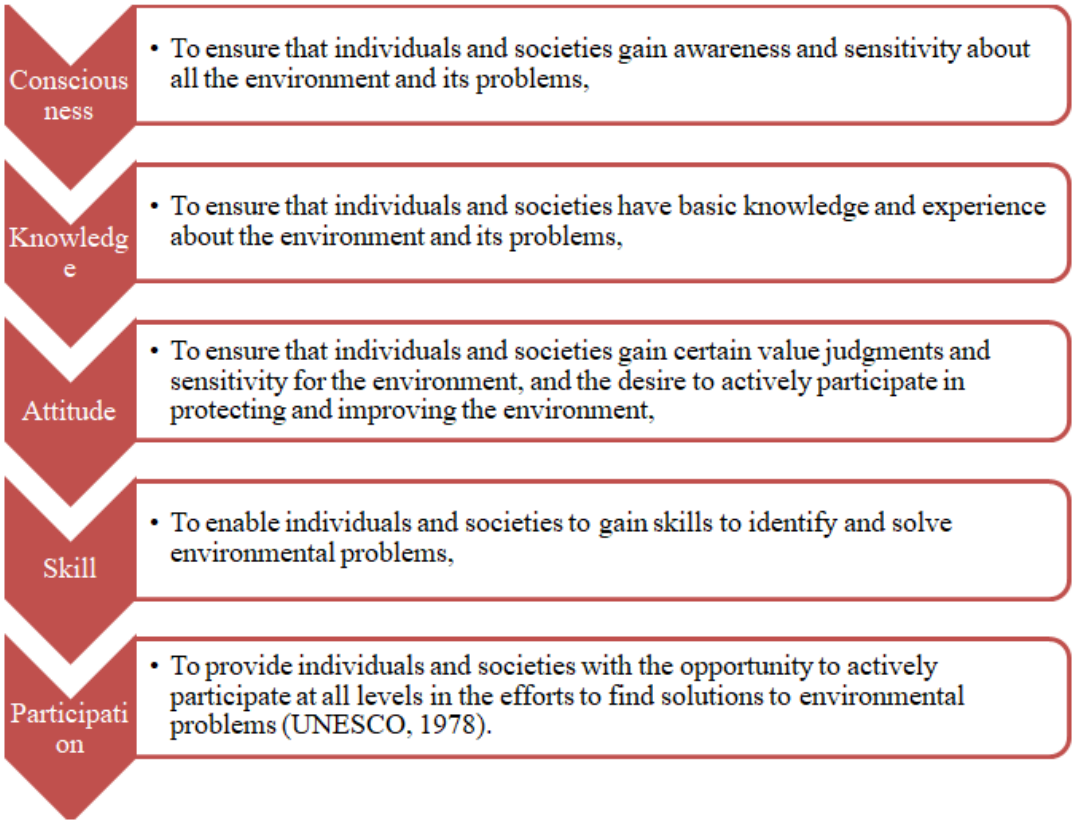
The Environmental Education

From past to present, various changes have been taking place on Earth. The most important factor causing these differences has been people. Human beings have been causing significant changes in the environment in order to have more comfortable living conditions in the world they live in. A significant part of these changes disrupt the natural balance of the world and cause many problems. The fact that all problems encountered, including the natural environment, are human-made is becoming more evident day by day (Özey, 2013).

The fact that humans have to live with the living creatures and the natural environment around them has brought along a process of adaptation. In this adaptation process, people have established dominance over the environment and made changes according to their own interests. As a result of these changes, irreparable damage to the environment has begun to occur (Külköylüoğlu, 2006). The environmental problems experienced bring the education of people for a better life and investment in the future. The structure of education, which aims to provide desired and permanent changes in the individual, emphasizes an important aspect for the environmental education. With the environmental education to be given to individuals, the process of thought, knowledge, behaviour, value judgment and skill development can be made effective with a good content based on understanding and preventing environmental problems (Geray, 1992).

The environmental education, which is an important starting point for preventing the environmental problems, aims to raise sensitive people who show responsible environmental behaviour and to enable these people to participate actively in the environmental problems with the responsibility they take. Global warming, acid rain, ozone depletion, ocean pollution and more localized environmental problems are becoming more and more common today. To find effective measures in solving these problems, the environmental education is one of the important options that come to mind (Kawashima, 1998; cited in Meydan, 2014). Apart from protecting the environment and ensuring sustainability, the environmental education focuses on protecting and improving the entire environment, including the biosphere, biomes and ecosystems, in addition to developing and protecting natural resources such as soil, water, and forests. With this inclusive subject area, the environmental education aims to go beyond informing the world citizens about over time and to train them as lifelong active participants in the environmental management (Peyton & al., 1995). Based on these basic objectives, the environmental education; it is defined as a learning process that increases individuals' knowledge and awareness of the environmental problems, develops the skills needed to evaluate the problems and encourages attitudes, motivation and responsibility to take responsible actions and make informed decisions (UNESCO, 1978).

While there are various international studies and meetings aimed at developing and disseminating the environmental education, the first international meeting on the environmental education in the world was held in Tbilisi in 1977 with the cooperation of NESCO-UNEP (UNESCO, 1978). At the meeting, it was tried to determine the basic definition, purpose and characteristics of the environmental education that can be followed around the world (Knapp, Volk & Hungerford, 1995). The declaration and recommendations of the Tbilisi Conference are accepted as an important turning point for the inclusion of environmental education in human education. Among the environmental education programs implemented all over the world today, the most advanced ones are the ones based on the Tbilisi Declaration (Ünal and Dımışkı, 1999). According to the Tbilisi Declaration, the aims of the environmental education are as follows:



The environmental education, the importance of which became widespread as a result of the publication of the Tbilisi Declaration, is considered as a life-long education in all formal and non-formal education stages, starting from pre-school education. The program, created with an interdisciplinary approach, aims to enable students to have foresight about different environmental conditions. The program gives importance to local, national and international cooperation as well as taking precautions and offering solutions for environmental problems (Bozkurt, 2006; cited in Karatekin, 2011). The environmental education, which aims to participate beyond just addressing environmental problems, to offer solutions, to offer an inclusive program to students as an environmental citizen of the future, has shown various developments and advances in the historical process from past to present.

Historical Development of the Environmental Education

Although there is no definite and clear information about the start date of the first studies on the environmental education, it is possible that the first studies are based on Ancient Greece and Ancient Egypt. It can be said that the studies in these periods have penalized individuals' nature sensitivities and negative practices towards the environment. In general terms, the studies on the protection of the environment become functional with the Industrial Revolution, in which environmental problems increased rapidly in the eighteenth century. The rapid industrialization starting with the Industrial Revolution and the pollution and environmental problems that followed it made it necessary to take some precautions and studies on protecting the environment have been started since the 1970s.

Zoologist Rachel Louise Carson's chemical insecticides (DDT and its derivatives) used her writings and for covering the research of *Silent Spring,* the book is a great contribution in terms of environmental awareness has occurred. With this study, the negative effects of nuclear fallout and modern agricultural practices on the environment began to be noticed. A legal regulation on environmental education was found in the USA in 1970. Accordingly, environmental education was first made into law and then a part of the infrastructure of federal governments (Carter and Simmons, 2010).

The environmental education gained a global dimension with the United Nations Human Environment Conference held in Stockholm in 1972 during the years when local and national studies were ongoing. 113 countries, including Turkey, participated in the conference. The conference has an important place in terms of the international dimension and scope of environmental problems. “Humanity has an obligation to protect and improve the environment for present and future generations.” In his statement, it was stated that people's environmental attitudes were given importance. At the conference, it was decided to establish the United Nations Environment Program (UNEP) and to commemorate 5 June as World Environment Day (Ünal and Dımışkı, 1999; Türk and Erciş, 2017). Within the scope of the International Environmental Education Program, a workshop was held in Belgrade in 1975 and as a result of this workshop, some basic principles for the environmental education programs were established with the Belgrade Declaration. After this workshop, the first international meeting on environmental education was held in Tbilisi in 1977 with the cooperation of UNESCO-UNEP, and at the meeting, the starting point for the environmental education to find a place in the world of education was accepted and the basic principles of the environmental education were determined (Knapp., & al. 1995; Palmer, 1998 cited in Özdemir Özden, 2011).

The report, titled "Our Common Future", prepared by the Environmental Development Commission, which was established with the decision of the UN General Assembly in 1987, is one of the important studies on raising environmental awareness at the international level. In the report, it was discussed that humanity is under threat and that common measures should be taken to affect the whole world, and the concept of sustainable development was defined. The Earth Summit was held in Brazil in 1992 with the participation of 170 countries, and this summit was considered as a continuation of the Stockholm Conference with the decisions taken on the environment (Agarwala, 2006). In 1997, the Kyoto Protocol, which was organized in Kyoto and aimed to make the fight against climate change concrete, was signed. According to this protocol, participating states, including Turkey, are obliged to reduce their greenhouse gas emissions at least 5% below the 1990 level in the period of 2008-2012 (Türkeş, 2006). After the World Summit, the World Sustainable Development Summit was held in Johannesburg in 2002, and the evaluation of the last ten years of the conference held in Rio was discussed, a forward-looking development strategy was determined and it was aimed to find solutions to the problems experienced in the implementation of the decisions taken at the Rio Conference (Alkış, 2009). The most recent work carried out in order to spread environmental education

and raise awareness of people is the Paris Agreement, which was accepted with the Paris Climate Summit held in 2015. 192 countries joined the agreement, of which Turkey is one of the parties. The goal of zeroing greenhouse gas emissions has been set in the agreement, which has been concluded to provide a new agreement on a global scale since the 1997 Kyoto Protocol (Karakaya, 2016).

Along with the studies organized on an international scale, various steps regarding environmental protection and environmental education can be seen in Turkey. First of all, the right to the environment has been defined under Article 56 of the Constitution. This article states that "Everyone has the right to live in a healthy and balanced environment. It is the duty of the State and citizens to improve the environment, to protect the environmental health and to prevent the environmental pollution. (Constitution of the Republic of Turkey, 1982, p. 56). In addition, the Seventh Five-Year Development Plan Environmental Specialization Commission covering the years 1996-2000 can be counted as one of the important steps taken to raise environmental awareness. In the Seventh Five-Year Development Plan, Environment Specialization Commission Report, the objectives that environmental education wants to bring to the individual are listed as follows:

1. It will create the possibility of a more sensitive approach to the environmental and natural events that develop around people and will be able to perceive the events in the environment through their sense organs,
2. Will be able to analyze the characteristics of the artificial environment and the natural environment comparatively and examine the interaction network between them,
3. Will be able to learn and apply the necessary techniques and methods to conduct environmental research,
4. Will be able to examine and comprehend the dynamics and inevitable connections between environmental sciences and other disciplines,
5. Improved decision-making ability, thus gaining the functions and skills to identify and solve environmental problems,
6. Watching the events related to the environment and feeling the importance of integrating with these events whether they happened near or far away,
7. Able to develop and apply the philosophy of protecting nature in their immediate surroundings and in their own living environment,
8. Developed the necessary features in his/her social life (such as self-confidence, responsibility, creativity, expressing himself/herself to others, applying what he/she believes),
9. Knowing what the value judgments they have and knowing how to resolve the contradictions that arise when other people do not have the same value judgments,
10. Individuals who can create or participate in social activities that can protect and improve the characteristics of the natural environment, and even protect and develop them, should be trained (Republic of Turkey Prime Ministry State Planning Organization Undersecretariat, 1995).

With the rapid increase in the importance given to the environment along with the studies aimed at determining the objectives of environmental education, the "Cooperation Protocol on the Studies to be made on Environmental Education" was signed between the Ministry of Environment and the Ministry of National Education in 1999. According to this protocol, it was stated that it is important to start environmental education from kindergartens and to give it in a systematic program in primary and secondary education institutions, and it was decided to carry out the following studies on environmental education:

- Emphasizing applied environmental education in order to develop environmental awareness in preschool and primary school children,
- To include environmental education in order to develop environmental awareness among teachers and students in secondary education institutions,
- Programs approved by the Ministry of National Education in secondary education institutions.
- Inclusion of Environment Course in the curriculum as a compulsory course for one hour a week,
- Include environmental issues in Apprenticeship Training Programs as well as in Vocational Technical Education Programs,
- Organizing in-service training courses for environmental education in order to ensure that all teachers and students are informed about the environment throughout the country (Türkiye Çevre Atlası, 2004).

In addition to their participation in international meetings and documents, there are also many environmental education studies carried out by non-governmental organizations in Turkey today. Free lessons supported by voluntary organizations are given at Private Environment Schools and Private Nature Schools in Istanbul, environmental education programs are implemented, and efforts are made to increase environmental awareness with the participation of families and children, along with camp trainings. Examples of these are the erosion training camps organized by TEMA Foundation every year in Bolu Aladağ, the out-of-school environmental education activities of the Ministry of National Education, and the out-of-school environmental education activities of the Natural Life Protection Association (Meydan, 2014). Similarly, KuşBank of Doğa Association, Doğa Çantam and Doğa School projects, ÇEVKOR's Ecology Summer Schools, Young Ecologists Training Program, ÇEKUD's “Let Our Children Grow with Trees” and Eco-Schools' students raise awareness on environmental education and environmental issues, the studies are also available.

Development

Social Studies

Social Studies is a field of study in which subjects related to human relations are handled with an interdisciplinary approach in order to raise good and responsible citizens who establish a relationship with the social facts based on evidence, and provide students with knowledge, skills, attitudes and values towards social life (Doğanay, 2002; Erden, undated; Sönmez, 1998). Social Studies course, which combines social and human sciences in order to provide an effective citizenship education at its base, has three unique teaching approaches: Social Studies as citizenship transfer, Social Studies as social science and Social Studies as reflective research (Öztürk, 2012).

The oldest and most basic approach of Social Studies course is Social Studies as a citizenship transfer. With this approach, Social Studies course is taught in order to raise effective citizens. According to this approach, citizenship is best taught through indoctrination and textbooks are accepted as a source for teaching. The information is handled in traditional ways such as question-answer method and memorization. The content is interpreted by the teacher and handled by the authorities. The second approach of Social Studies is teaching Social Studies as a social science. According to this approach, the citizenship transfer is best developed when making decisions in line with social science concepts, processes and problems. It is aimed to provide students with a social scientist perspective based on research and inquiry specific to social sciences. Course content consists of separate or integrated content specific to social sciences. The third approach of Social Studies course is teaching Social Studies as a reflective research. Based on John Dewey's ideas, this approach aims to develop students' problem-solving and decision-making skills. The problematic situations that they may encounter in life and in their immediate environment are created for students, and they are provided to examine and research them (Öztürk, 2012).

Social Studies course has a structure that has its own nature-specific goals, along with the basic objectives of the three approaches that form the basis of it. Accordingly, the course incorporates social science disciplines in order to prepare students for the social life. Considering the primary purpose of raising the child as an effective citizen, the course aims to give importance to the integrity of the country as a citizen who believes in democracy, to participate actively with the awareness of his duties and responsibilities, and to adopt the constitution and its basic principles knowingly. It can be said that the course, which integrates social science disciplines in its content, aims to enable the student to research and think like a social scientist, as well as to provide acculturation in the student with the individual and social aspects of these disciplines. It can be said that acculturation, which is one of the main purposes of the education at the point of creating desired changes in the lives of individuals, is effective in ensuring the adaptation of the child to the environment and the world through Social Studies course. Through the course, it is also aimed to create

a knowledge and awareness of time in the axis of the past-future-present in the student. Based on the concept of time, the course aims to enable the students to gain knowledge about the society they live in, and to gain the sense of keeping their culture alive and protecting it. In addition, it also aims to raise the awareness of transferring the material and spiritual values created in the process of cultural, historical and social development to future generations (Tay, 2018).

Social Studies course has developed its content according to the conditions of the era in line with its basic objectives from past to present. With this innovative approach, it aimed to promote a democratic citizenship and teach various social science disciplines; on the other hand, it aimed to help the students develop twenty-first century skills. In this context, with twenty-first century skills, the students should approach their environment with a critical perspective, understand that they form a global integrity with the people they share the same planet with, develop literacy skills in media and information and communication technology, and develop life skills such as flexibility, adaptability, self-management, responsibility, productivity and career skills (Zarillo, 2016). It is aimed to realize an awareness and action towards the adaptation in changing and developing world conditions, active participation, research and examination in students with twenty-first century skills. The structure of Social Studies course, which aims to teach the students about current issues and events and ensure their participation in them, brings into account the direct relationship of the course to developing twenty-first century skills. In addition to twenty-first century skills, there are also new approaches aiming to follow up-to-datedness and innovation in Social Studies course. With the view of the global education, which is one of them, it is revealed that the importance of educating students not only as the citizens of a particular country but also as the citizens of the world. It is aimed to raise awareness of the intercultural differences, a tolerant approach towards them, and the integration with the phenomenon of globalization, which accelerates with the approach of societies to each other, economic, political, social and cultural integrations. In addition to global education, within the scope of Social Studies course, the problems related to peace and security, the problems related to nations and international development, the problems related to human rights and the environmental problems can be addressed as the new approaches (Erden, undated). The topics for these approaches are given below:

The New Approaches in the Development of Social Studies Program	**The Problems that can be addressed in Social Studies Program**
The Global Education	• The study of systems • Studying the human values • Studying the continual problems • Studying the World History

The Problems Related to Peace and Security	• West-East Relations • Terrorism • Colonialism • Democracy
The Problems Related to National and International Development	• Famine and wealth • The rapid growth of population • North-South relations • Appropriate technology
The Problems Related to the Human Rights	• The racial discrimination • Indigenous homelands • Political criminals • Religious persecution • Refugees
The Environmental Problems	• Acid rain • River pollution • The consumption of forests • Fallouts • Erosion
The Movements in Society	• Peace movement • Women's Rights movement

As stated in the table, Social Studies course aims to create the lasting effects on knowledge, skills and attitudes of the individual, the country s/he lives in, and the world. Through the course, students become individuals who work not only for their own environment, but also for the whole world. Due to the structure of the course, citizenship issues, global issues and problems, current events, culture and value structures and environmental issues can be covered. It is considered important that students learn about environmental skills and values through Social Studies course so that they can be sensitive and participatory in environmental issues in the world they live in.

Social Studies Course and the Environmental Education

With the environmental problems' increasing rapidly and causing irreparable damage in the world, it has become important to protect and maintain the environment in the international arena. In order to make people living in the world a part of this active effort, it is necessary to educate and raise the awareness. Being able to provide people with the environmental feelings and thinking skills to protect the environment from an early age will result in a more positive and concrete result than making a law on protecting the environment and natural resources (Öztürk, 1998; cited in Karatekin, 2011). It is important to give environmental education to children from an early age in order to protect the environment and ensure sustainability. As a citizen of the future, it is an important goal

for the environmental education to feel responsible for both the immediate environment and the distant environment, and to want environmental justice for everyone living in the world. In order to ensure environmental justice, it is important for everyone to know that they have equal rights in accessing and using natural resources, and that everyone has the right to live in a healthy and safe environment and to have an equal say in the decisions taken regarding the natural environment (Leist, 2011).

The environmental education has an interdisciplinary program structure. By learning about organisms, animals and plants that share the world together, students get to know the important part of science. Many traditional learning activities such as nature lessons and out-of-school education also form a part of environmental education (Zarillo, 2016). With this interdisciplinary structure, the environmental education contains similar contents with Social Studies course. At the same time, the Social Studies course, which plays an important role in the environmental education, enables students to see more than one dimension as a whole about a subject that includes the disciplines of social sciences by fusing and integrating content from various disciplines (Öztürk, 2012).

Since the Social Studies course aims to raise active citizens who can make decisions and solve problems flexibly according to the changing world and environmental conditions, it directs students as individuals to research and examination. As a reflective research that forms the basis of Social Studies, the Social Studies approach refers to the same goals as the cognitive skill dimension expected from the individual at the point of being environmentally literate. Accordingly, it is important to develop high-level thinking skills such as identifying, analyzing, making decisions and solving problems that students face. An inquiring, investigative and decision-making perspective, which is desired to be gained by individuals with environmental education, can be associated with one of the basic approaches of Social Studies. Defining environmental problems, analyzing problems and making appropriate decisions for the problem indicate an important step in terms of cognitive skills. It is important to raise an environmental literate through environmental education with these skills, which are also important to Social Studies (Barth & Demirtaş, 1977).

Environmentally literate individuals are referred to the people who have awareness, knowledge and sensitivity about how the natural systems in the world work and how human activities affect these systems (Teksöz, Şahin, & Ertepınar, 2010). The structure of the environmental education, which is based on the aims of protecting the environment and ensuring its sustainability by raising an environmental literate, as well as human and environmental justice, is also similar to the universal goals of Social Studies regarding values and social participation. Social Studies course, which supports different people and cultures to see the value they deserve in a fair and equal environment and live in accordance with the human rights, can be associated with each individual's obtaining the right to live in a healthy environment under equal positive conditions in order to ensure environmental justice. In addition, the aims of supporting the defence of rights as

a citizen by showing sensitivity to people of all cultures, taking a common responsibility through group work, fulfilling civic responsibilities, and taking action to contribute to the improvement of people's living conditions bring together the social participation dimension of Social Studies and environmental education. (Öztürk, 2012).

Social Studies and the environmental education course has a structure that wants individuals with similar points and similar goals to take responsibility as an active citizen of the future, to be aware of their duties, and to produce solutions to the problems can be faced by every individual. In addition to the structure of environmental education that deals with nature and the environment, the goal of creating a healthy environment for all humanity meets the common denominator of Social Studies with the goal of raising individuals who are sensitive to their environment and to provide justice and benevolence towards others at the point of value education. The curriculum structure of the two fields, which has similar aims, offers various opportunities for environmental education practices within the Social Studies course. The structure of Social Studies, which also reflects learning outside of school, helps students to develop their ability to act for their immediate environment and to think and decide about environmental problems in their distant environment.

A few suggestions for the possibilities of using the environmental education in Social Studies course are given below in line with the suggestions also discussed by Zarillo (2016):

- Students can be asked to examine the garbage in order to realize that whether they waste and consume too much. During this examination, students will also be able to see the recycling materials among the wastes and will be able to be conscious of separating these wastes.
- Planting activities can be carried out in order to ensure the sustainability of natural life and to encourage active participation. By researching the environment that saplings need in the process of transforming into a tree, it can be ensured that the saplings learn that they need protection and attention. During this study, they will be able to learn both to keep the tree alive and to protect it from negative effects.
- Reading activities suitable for the age level of children dealing with environmental issues can be organized. TEMA Foundation's publications on environmental issues can be cited as examples of these books (https://minik-yavrutema.org/).
- Students can be asked to observe the energy consumption at home so that they can have the opportunity to practice the environmental education outside of the school. In this way, it is tried to see and prevent unnecessary use.
- They may be asked to conduct research on endangered animals and present them in class.
- In order to become sensitive citizens to the environmental issues, they may be asked to read the laws related to the environment, bring the items that interest

them to the class and create a discussion environment.

• They may be asked to present a newspaper article, interpret the newspaper article, and create a current news column in the classroom by bringing examples of the environmental problems occurring today from their near and far surroundings.

CONCLUSION

Today, the environmental problems that are increasing at the global and regional level have made it extremely important to take a joint action and take action. Responsibility taken as an individual in solving the environmental problems and changing attitudes towards improving the environment are important for taking permanent measures. In addition, there is a need for the people who are aware of their responsibilities, who can act together not only for individual improvements, but also socially. One of the most effective methods in developing societies is education. Since it is possible to create a permanent behavioural change in the individual through education, it can be seen that it is also effective for realizing the environmental education.

The aim of the environmental education is to develop a positive attitude change towards the environment, to take responsibility and to take an active role in the solution of environmental problems for everyone. Being aware of the fact that the environment does not only consist of our immediate surroundings, it is important for the protection of the environment to be able to take responsibility individually. The meetings and published documents on the environmental education from past to present consider the value of the environmental education for our present and future. With these studies carried out at the international level, large-scale steps are taken, and the existence of the environmental education is taken into account for individual developments and small-scale steps.

Social Studies course, which has an important place in the environmental education, also includes the aim of raising citizens who are sensitive to their environment and the world, which is one of its main goals, in order to raise good environmental literate individuals. It is a necessary indicator for a good environmental education that students can take responsibility and be concerned about their close and distant environment and participate as a result of Social Studies course. The structure of the course that renews itself and focuses on the current events and the events discussed in environmental education support each other.

Social Studies course and the environmental education are two important stakeholders in order to raise people who can adapt to these changes with the changing world and the environmental conditions. It emphasizes the necessity of raising generations who can take responsibility for the environment and solve problems, to be able to deal with Social Studies and the environmental education more together and to develop application opportunities for generations who work, produce and take responsibility for the environment.

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Chapter 16

JULY 15 COUP ATTEMPT AND FETÖ TERRORİST ORGANİZATİON

JULY 15 COUP ATTEMPT AND FETÖ TERRORİST ORGANİZATİON

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INTRODUCTION

In order to better understand the July 15 coup attempt, it is necessary to know its historical background in detail. The "Eastern Question", which western states used as a political term for the first time in the Congress of Vienna in 1815, is a critical one to expel the Turks from Europe and send them to the Central Asian steppes concept in terms of understanding our day. According to Europeans, the beginning of the Eastern Question can be traced back to the end of the Roman Empire's political existence due to the tribes migration because the Hun Turks turned the whole balance of the Roman Empire upside down (Yuvalı 2009: 102). This situation turned into Turkish hostility over time. While Albert Sorel commented that "As soon as the Turks appeared in Europe, an Eastern Question emerged" (Sorel, 1889: 6), the French Historian Sinyobos shows the beginning of the Eastern Question as the XVIII century and says that the issue was named in the XIX century. (Karadağ 2005: 7-9). Borjva, on the other hand, defines the Eastern Question as the clash of Christian and non-Christian tribes since the beginning of the Middle Ages (Karadağ 2005: 11-18).

It is possible to evaluate the Eastern Question in two stages. The first stage is the process from the Battle of Manzikert on August 26, 1071, to the Second Vienna defeat on September 13, 1683, and the second stage is the process from September 13, 1683, to the Battle of Sakarya on September 12, 1921. While Europe was on the defensive side between 1071-1683, the Turks were offensive. During this period, Europe started the Crusades to not let the Turks into Anatolia, but they failed. In the second period, Europe wanted to prevent the Turks from entering Rumelia, Europe, but it was also not successful this time. After the 1683 Vienna defeat, Europe was on the offensive side while the Turks were defensive. During this period, Europe struggled for the Christian population in the Balkans to either gain their independence or gain rights. It has also been successful. During this period, Europe aimed to expel the Turks from Europe and to take back Istanbul. The last stage of the Eastern Question was to send the Turks back to the lands they came from, that is, to expel them from Anatolia (Ulusan 2009: 234). On this subject, Romanian diplomat and historian Trandafir G. Djuvara collected 100 plans made in Europe throughout history to destroy Turkey, expel the Turks from Europe, obtain the holy lands, and publish them in a book in Paris in 1914. It is seen that the most and various dangerous plans were made in the 19th century. In this period, to achieve their goals, the great powers weakened

and unprotected the Ottoman Empire through cultural, economic, and political pressure methods and reached their final goals by using military pressure methods.

By the 20th century, the focus of the Eastern Question shifted to the Balkans, the Arab world, the Straits, and Anatolia. With the declaration of the Second Constitutional Monarchy on 23 July 1908 and the start of the "Committee of Union and Progress Period", and with the new insurrections, Tripoli (1911) and Balkan Wars (1912-1913) occurred out, and the Ottomans lost great lands with these wars. In an environment where the Bulgarians advanced to Çatalca, and the support of England was withdrawn, the Ottoman Empire sought to get closer with Germany. During the First World War (1914-18), the Entente Powers agreed to share the Ottoman Empire with the Sykes-Picot Treaty (23 October 1916).

The sharing plan was implemented in line with the San Remo Conference (April 18, 1920) after the war; It resulted in establishing a series of states under British and French control in the former Ottoman lands in the Middle East. Meanwhile, the geopolitical balance established by the Ottoman Empire around Istanbul and the Bosphorus was destroyed. However, the attempts to break up Anatolia were frustrated with the Turkish War of Independence. Western states had to recognize the new Turkish Republic established in 1923 with the Treaty of Lausanne (July 24, 1923). The process that started with the proclamation of the Republic on October 29, 1923, brought with it the struggle for the existence of the State of the Republic of Turkey, the last stronghold of the Turkish Nation in the Anatolian geography. Various plans were made on the Turkish Nation, which was struggling for existence in Anatolia, and it was tried to be stopped by coups. The void caused by the 1960 Coup, the 12 March 1971 Memorandum, and the 1980 Coup played a vital role in the formation of Fetö and similar organizations.

The formation called Fetö Organization was essentially an education-oriented organization in the 1970s. FETÖ schools were used as administrative recruitment centers. After establishing the organization, with the publication of Sızıntı Magazine in 1979, broadcasting and propaganda activities became one of the main areas of interest and made significant contributions to the organization in terms of creating a social sphere of influence. With the Zaman newspaper and Aksiyon Magazine published in the following periods, the organization's broadcasting and propaganda activities became even more robust. (PA 2018:16) As a reaction against such an adhesive gap in the country, especially after 1980, Fetö structures gained momentum. FETO; With their reticence, privacy, and secrets, as they move away from the great society they live in, they are entirely cut off from the real world and almost entered into an illusion (Demirci, 2016). When we look at the factors that play a role in the growth and development of the organization, it is possible to list them as follows.

1. FINANCIAL RESOURCES OF THE ORGANIZATION

The organization has established companies operating in different sectors such as banks, financial institutions, private education institutions, energy, health, logistics, food, tourism, and media to finance its economic infrastructure and activities. The revenues of the companies belonging to the organization operating by taking advantage of the opportunities provided by the democratic environment and the shares obtained from the tenders awarded to these companies through their employees placed in public institutions, the "benevolence money" received under the name of donation from the salaries of businessmen and public officials who are members of the organization or sympathize with the organization, constituted a significant part of its revenues. The organization has also provided resources through non-governmental organizations such as associations and foundations (YCBSR:2017:12).

STRUCTURING INSIDE GOVERNMENT INSTITUTIONS

FETÖ, whose structuring within the state institutions was under its influence, trained the students in the educational age in line with their aims and chose their professions by themselves. The organization gave some of its members the exam questions they had taken by stealing and enabled them to settle in all public institutions and organizations, especially the military, courthouse, civil service, security, and intelligence institutions (YCBSR:2017:12).

STRUCTURING IN SOCIAL AND COMMERCIAL AREAS

The organization tried to provide a legitimate image in public by reaching large layers of society through the unions, foundations, associations, and media organizations it founded. Organizing in areas such as banking, insurance, tourism, energy, health, media, and education, has ensured the transfer of financial resources, thereby increasing the effectiveness and visibility of the organization. (YCBSR:2017:13).

ACTIVITIES OF THE ORGANIZATION

Unlike standard armed terrorist organizations, FETÖ has insidiously settled in State institutions and carried out its activities mainly through legal-looking institutions and organizations in line with the State model. As the details are stated in the indictment of Ankara Chief Public Prosecutor's Office dated 06.06.2016 and numbered 2016/1632; FETO, who claims to act based on religious references; - Interpreting the rules of religion in line with their interests, - Seeing the state as an adversary and opposing front, using "code names, special communication channels, the money of unknown origin" like an intelligence organization, when it should be open and transparent with all its structure, - Managing the activities of the organization's management staff from abroad. -Using all kinds of pressure, blackmail, and illegal activities to eliminate the people they have chosen

as their targets makes it clear that this organization is an organized terrorist organization, including espionage activities (YCBSR:2017:13).

WHAT HAPPENED ON JULY 15

During the coup attempt on July 15, 2016, the epicenter of the events organized by Ankara Fetullah Terrorist Organization (FETÖ) member soldiers killed 251 citizens across the country. Regarding July 15

- In the process that started with the notification received by the National Intelligence Organization (MIT) on July 15, many commanders, including Presidential Secretary-General Fahri Kasırga and Chief of General Staff Hulusi Akar, were detained by the putschists at Akıncı Base.

- While tanks and armored vehicles were leaving the barracks in many units, warplanes used by FETÖ member pilots over Ankara bombed the Parliament, the Presidential Complex, the Police Department, and TÜRKSAT, causing the martyrdom of many citizens. The events in the capital, which witnessed the heroic resistance of the citizens, came to an end at noon the next day.

- After the officer in the Army Aviation Command went to the MIT Undersecretariat at 16.16 on the day of the coup attempt and informed that FETO member soldiers would attack the institution to take Undersecretary Hakan Fidan, MIT officials informed the Deputy Chief of General Staff, General Yaşar Güler, by phone. Subsequently, an MIT Deputy Undersecretary and MIT Undersecretary Hakan Fidan came to the Chief of General Staff separately.

- The FETÖ members, who were noticed by the activity in the headquarters, panicked and decided to adjust the initiative that they had planned to start at 03.00 on 16 July to 20.30 on 15 July.

- One minute after MIT Undersecretary Fidan left the General Staff, 33 Special Forces Command (ÖKK) personnel gathered for the coup preparations at Akıncı 4th Main Jet Base Command, about 50 kilometers away from the headquarters, set off by bus to the General Staff.

- Major General Mehmet Dişli, Head of the Strategic Department of the General Staff, who returned to the Headquarters, said to the Chief of General Staff Hulusi Akar, when he entered the office at 21.00, "Commander, the operation is starting, we will take everyone, battalions, brigades are on their way." thus he announced the coup with his words. Reacting to what was said, Akar's mouth and nose were covered by other putschists, who stated that he would not support the initiative, and his hands were tied with plastic handcuffs.

- The putschist Special Forces (ÖKK) personnel coming from Akıncı Air Base detained Land Forces Commander General Salih Zeki Çolak, who was accompanied by Land Forces Chief of Staff General İhsan Uyar and his adjutant Yunus Can, who returned to the headquarters. Infantry Sergeant Major Bülent Aydın, Çolak's bodyguard, was martyred while trying to intervene in the incident.

- At almost the same minutes, the planes taken off by the putschist pilots began to fly low in the skies of Ankara.

- Polatlı 58th Artillery Private Training Brigade and Artillery Missile School in Ankara, Mamak 28th Mechanized Infantry Brigade, Beytepe Gendarmerie Training and Schools Command, Army Aviation Command, War Colleges Command, Etimesgut Armored Units School and Training Division Command, General Staff Special Forces The coup plotters in the Command and the Presidential Guard Regiment also took active action. Thousands of soldiers came out of the barracks with many tanks, armored personnel carriers, and other vehicles. The putschists in the Force Commands also mobilized.

While these developments were taking place in Ankara, the sound of explosions rose around the Gölbaşı district. The bomb dropped on the Aviation Department of the General Directorate of Security in Gölbaşı from the F-16 used by the FETÖ member coup plotters killed seven people and injured five people.

When it was 33 seconds past midnight, the Special Operations Department of the General Directorate of Security in Gölbaşı was bombed this time. Here, too, 44 policemen were martyred, and 36 injured people were taken to hospital.

While helicopters carrying the putschists opened fire on the MIT campus in Yenimahalle, the putschists, who went to TRT from the Presidential Guard Regiment, forcibly declared the coup on a live broadcast 00:13.

President Recep Tayyip Erdoğan, connecting to CNN Türk channel at 00:24, said, "This development is an attempt by a minority in our Turkish Armed Forces, unfortunately, and this is a movement that they use as the upper mind, encouraged by the parallel structure of this known structure.". Erdogan called the nation to the squares to stand up against the coup plotters.

After the call, citizens from every district of Ankara started to gather in the squares and streets around the General Staff Presidency, especially İnönü Boulevard and Milli Müdafaa Street, and around Kızılay Square, Presidential Complex, AK Party Headquarters, and Gendarmerie General Command. Citizens reacted to the soldiers who left the barracks for the coup attempt and even entered the struggle.

Meanwhile, the putschist group, including civilians, who wanted to stop satellite broadcasts, went to TÜRKSAT's facilities in Gölbaşı by helicopter. 2 TÜRKSAT officers, who came to the institution as a precaution against the coup plotters, were martyred by FETÖ member coup plotters.

At 00.56, another bomb was dropped on the Ankara Police Department building in Yenimahalle, and at 01.08. As a result of the attack, two citizens were martyred, and 39 people were injured. Eight citizens were martyred as a result of the activities of the putschists in armored vehicles in front of the Ankara Police Department.

The plane carrying Special Forces Group Commander Brigadier General Semih Terzi and accompanying ÖKK soldiers from Diyarbakır for the coup activities landed at Etimesgut Airport at 01:13. Terzi and his team moved to ÖKK headquarters in Gölbaşı by helicopters.

Special Forces Commander Lieutenant General Zekai Aksakallı said, "I am giving you a historical mission. Semih Terzi is a putschist traitor, kill Semih Terzi on behalf of the country and the nation. At the end of this, there is martyrdom. *Hakkını Helal et* (Make your right halal to me)." Ömer Halisdemir, who was on duty in ÖKK, shot and killed Brigadier General Semih Terzi, who came to ÖKK headquarters after reaching Ankara with his soldiers. However, Halisdemir was also martyred by the putschist soldiers in Terzi's team.

Deputies from all political parties represented in the Grand National Assembly of Turkey gathered at 01.39 in the General Assembly Hall of the Grand National Assembly of Turkey to protect democracy and the Assembly.

Citizens, who gathered in front of the General Staff to oppose the coup attempt, cut in front of tanks and armored vehicles, and climbed on them, entered the General Staff at 02:21. However, the putschists opened fire on the citizens.

Citizens were also fired on from helicopters flying around the General Staff and Gendarmerie General Command. Thirty-eight people who tried to resist the putschists inside the General Staff and around the headquarters were martyred due to firearms and helicopter attacks.

In addition, two citizens who fell over the tank at Akay Junction and one citizen who was shot with a firearm at Dikimevi lost their lives.

At 02.35, a bomb was dropped on the Turkish Grand National Assembly, a few hundred meters from the General Staff, from one of the F-16s in the air.

With the light of the day, the target of the coup plotters was the Presidential Complex this time. At 06:19, one of the F-16s used by the pilots involved in the coup attempt was dropped on the bridge crossing and the parking lot near the Presidential Complex, and 15 people were martyred. Seven people were injured in the attack of the putschists.

After the coup plotter pilots continued their flights over Ankara in the morning hours, the planes that did not take part in the coup attempt hit various points on the base and prevented the coup plotters' planes from taking off.

The bloody coup in which FETÖ/PDY members infiltrated into the Turkish Armed Forces and/or more than eight thousand military personnel supporting this organizational activity, 35 aircraft including warplanes, three ships, 37 helicopters, 246 armored vehicles, 74 of which are tanks, and nearly four thousand light weapons were used; in its attempt, the organization targeted strategic regions in Istanbul.

A group of soldiers closed the Bosphorus and Fatih Sultan Mehmet bridges to one-sided traffic around 22:00. The inexplicable military activity became news on television channels. There was news on social media that explosions and gunshots were heard in some cities, especially in Ankara and Istanbul.

By order of the Presidency of Religious Affairs, sela's were played from the mosques. The planes under the command of the putschist soldiers made low flights over the city and tried to intimidate the people with sonic explosions and prevent the people from going out.

Atatürk Airport was tried to be captured by the organization's soldiers, which were dispatched via tanks. As of 22.15, the entrances and exits to the airport were closed by the putschists. The putschist soldiers seized the flight control tower and stopped all domestic and international flights. Passenger planes were prevented from landing and taking off by making low flights with F-16 fighter jets over the airport. Soldiers fired on thousands of people who flocked to the airport at the call of President Erdogan. While 17-year-old Mahir Ayabak was martyred on the track, dozens of people were injured. In the face of the resistance of the people, the soldiers had to leave this place.

Citizens who took to the streets at the call of President Erdogan began to gather in front of the TRT building. The putschists opened fire in the air when the citizens reacted against them. Upon their failure to disperse, the putschists, who opened fire on the citizens and the police who came here, consequently martyred Fahrettin Yavuz and Murat Demirci. Forty-eight of the citizens were injured in various parts. The putschist soldiers responded with fire to the call of the police teams to "surrender". Realizing that the coup attempt had failed, the soldiers surrendered later.

CONCLUSION

The most important feature distinguishing FETO, the perpetrator of the July 15 coup attempt, from other terrorist organizations is its organizational and methodological difference. For this reason, it is possible to define July 15 as a coup attempt that has no other example in the world; because it has shown how a parallel state structure that has penetrated the deepest part of the state, as an armed terrorist organization, can martyr hundreds of people from its own people and also cause thousands of them to become veterans. In order to understand and overcome the social and political trauma of July 15, it is necessary to analyze how FETO infiltrated the state and its impact on the process leading up to the coup attempt. FETÖ has aimed to infiltrate the state since its establishment dating back to the 1960s. It has been chosen as the main target to infiltrate institutions such as the TSK, the judiciary, and the General Directorate of Security. FETÖ, which did not take a position of direct opposition to the state from the beginning, has constantly introduced itself as "moderate" at domestic and abroad and has tried to prevent its members from being accused of extremism. Thus, on the one hand, the society, on the other hand, made a plan to infiltrate the state by trying to legitimize itself in politics. The two main elements that dominate the organization's infiltration into the state levels are "confidentiality" and "speech". It has instilled in its members the awareness that every method is permissible to achieve its purposes. It is possible to list the main methods used by FETÖ in infiltrating the state as follows: Since the 1980s, the organization has aimed to infiltrate these institutions by recruiting students into high schools that train personnel for institutions such as the Turkish Armed Forces and the General Directorate of Security, which it has considered as private areas. While it prepares the students, it aimed to put into these high schools initially for exams (one-to-one) and helps them succeed; they adopted the method of stealing and distributing the exam questions after the students were deciphered, especially in military schools. Another method used by FETÖ when infiltrating the state was to seize some duties and positions in these institutions, liquidate non-organizational personnel, and fill the vacated positions with members of the organization who were previously "polished" in various ways. It has been observed that various social media tools have been chosen as a means of defaming the people whom the organization aims to liquidate and making propaganda against them and that their members have replaced the people who have been dismissed in this way. At present, the Republic of Turkey has struggled with an organization that aims to infiltrate the state for almost fifty years. However, in order for this struggle to be carried out successfully and similar experiences not to be actualized again, it should be considered essential that the strategies that FETÖ followed in order to infiltrate the state should be analyzed very proficiently by the practitioners who waged the struggle, and that all interlocutors, especially the society, should be told what kind of organization they are facing for the sustainability of social support.

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Chapter 17

INTERNATIONAL ORGANISATIONS IN TERMS OF THEIR APPROACH TO TURKEY AND MUHSIN YAZICIOĞLU'S MULTINATIONAL PROJECT IN THE 2000S: CASPIAN COMMON UNION

INTERNATIONAL ORGANISATIONS IN TERMS OF THEIR APPROACH TO TURKEY AND MUHSIN YAZICIOĞLU'S MULTINATİONAL PROJECT IN THE 2000S: CASPIAN COMMON UNION

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INTRODUCTION

Historically Modern Turks reached the lands in Anatolia in 1071. However, it was not the first attempt for Turks to live there. Before that date lots of Turkish clans are told to have lived in those lands throughout the history and some archeological researches support this idea. Pioneering Turkish groups who came and settled before their communities left their marks. The oldest Turkish traces in Anatolia are seen as pictures on the rocks. These documents are spread over a wide area and show the oldest inhabitants of Anatolia and provide information about the life of the Turkish people lived there. Researcher Muvaffak Uyanık discovered thousands of pictures, depicted on the rocks in Hakkari's Gevaruk and Tirşin plateus, which prove Turkish existance across the Anatolia in the history (Gürler, 1997).

Seljuks, in their late periods, Ottomans, from the beginning of their history always turned their direction to the West not only just by wars, but also in peace times and so has done Turkish Republic, the follower of those. However, according to the Westerners' point of views Turks were not a part of the West. Sometimes they pleaded the geographical position of the capital city, sometimes they confessed the religious difference. Besides, they wanted the strong military force of Turkey to support them when they fought against powerful enemies. After finishing the problem by Turkish army's support, they put special rules not to defend Turkey against enemy attacks except Soviet or Bulgarian forces. A double standard approach has been shown to Turks who have been their historical friends and historical enemies.

Alternative leagues have to be found by the governors. One-sided regimes have been affected negatively. Turkey has tried to be a part of the Western world for nearly 200 years. Some advantages were reached like the participation to NATO when Stalin threatened Turkey. However, there were disadvantages of being a NATO member because of being at the first border of the Soviet Union, too. The need of defence was the most important motivation of both sides; however, NATO did not guarantee to defend Turkish people except Soviet or Bulgarian attacks. EU has never accepted Turkey to the union as a member and Turkey could not improve herself in terms of economy, industry,

education and science. These kind of problems required finding new alternatives. Muhsin Yazıcıoğlu, who was the leader of a small party, proposed an alternative league in Caspian region where brother Turks were living and a big potential of hydrocarbon resources need to be carried to other regions before his suspicious death.

In this study the biggest leagues which Turkey has attended or applied will be evaluated by giving an alternative proposal in Caspian basin revealed by Muhsin Yazıcıoğlu.

League of Nations

Most of empires could not maintain their integrity against the nationalism winds of French Revolution and those great states began to collapse one after the other before the end of the Great War which broke out at the first quarter of the 1900s.

During the destroying war, in which more than 65 million people were recruited, 8.5 million were killed and more than 7.5 million people were lost or captured, the President of United States of America T.W. Wilson introduced 14 principles in 1918 and started a movement aimed at ensuring all nations to have their own land and to set up peace among humanity. This idea, which was motivated by Wilson, turned to be the first multinational union under the name as "League of Nations" in 1920. This league was "a peace society that protects the territorial integrity of large and small states". However, those 14 principles, which were edited by Wilson to stop the dominance of great powers on the weak ones, were integrated to Versailles Treaty (Polat, 2020). That treaty was a text for the sake of winners and not taking care of the losers' rights. By the way, League of Nations did not have sufficient sanctions on its members. The first attempt of establishing a peace league was collapsed in the minds of small countries. There were some achievements of the League like finishing the problem between Bulgaria and Greece who occupied the Bulgarian territories in 1925, the border problem between (British) Iraq and Turkey, another border problem between Lithunian and Germany.

The participation of Turkey to the League of Nations took 9 years after the Lausanne Treaty. The process of not accepting Turks as a member of the League was organized by the British politicians. Because Turkey and Britain had a conflict on Mosul Question after the Great War. British side's representatives did not want the opposing Turkey to be a member of the League till the end of the negotations. According to those politicians, if she was accepted to the League, Turkey would have found more rights and compromises in the Mosul Question. As not being a member, Turkey was not able to get power in diplomacy and had to accept the British claims in Lousanne and League of Nations drew the border between Turkey and Iraq according to the demands of powerful Britain. Nevertheless, Turkey, who was not accepted as a member to the league for 9 years, was informed about the contents of the international developments and was invited to most of the assemblies of the league after Lausanne. Turkey got an acceptance invitation to be a member in 1932. By approving the invitation Turkey decided to be a member and she joined the League on

18 July 1932 (Ulusan, 2008).

This league was established by the ideas of U.S. President Wilson, but American Congress did not confirm the membership. One of the most powerful country's disapproval was a very big problem for the league. U.S.A. did not join the workshops because of not being a member and so, Britain and France took the leadership and also the advantage of the league. In 1929 Japan army occupied the Chinese territories and League of Nations could not stop strong Japan Empire (Bennet, 1995). All these problems made the league a discredited society. Contrary to the peace socities envisaged by the League of Nations, totalitarian governments with fascist or communist characteristics continued to drag the humanity into another disaster with a bigger and more catastrophic war than the first one 20 years later. The League of Nations could not prevent the new disaster and collapsed.

United Nations and Turkey

The first attempt for multinational societies was League of Nations. However, it has not been the unique. After the II.nd World War United Nations was established. The first step to set up this new league was Atlantic Decleration. It was signed between British Prime Minister Winston Churchill and U.S.A. President Roosewelt. This decleration contained 8 basic rules like Wilson's 14 principles in 1918. After the announcement of this decleration America lost its neutral position. Following her join to the war, in 1943, U.S.A., China, Great Britain and U.S.S.R. gathered in Moscow and announced another decleration talking about the necessity of a multinational community which was going to be ruled by peaceful dominant countries and open to all countries (Hasgüler & Uludağ, 2012). After long assemblies, the establishment of United Nations was announced on 25 June 1945. The difference between United Nations and League of Nations was forming a military force (Altıner, 2014).

Instead of reinforcing the discredited League of Nations, United Nations was established by 4 Dominant countries which formed the Atlantic Decleration to stop the German Nasism, Italian Fascism and Japan Militarism and gave the veto power to 5 dominant countries in Yalta Conference on 11.February.1945. The first rule was dictated to the countries planning to join the new league as Declaring war to there hostile countries until 01 March 1945. The establishment conference was held in San Francisco on 25 April 1945. Turkey, like other 46 member countries, accepted the rules and joined the conference. The conference went on discussing the right of veto power of the strong and dominant countries. However, it was not possible to make them give up their veto power. At last, 110 principles of the United Nations, named as "Chart", was signed by 50 countries and the new league became valid (Kocaoğlu, 1997).

Even though both of these multinational leagues were formed to preserve the peace among the nations, they acted to maintain the benefits of the founder states or dominant states Ulusan, 2008). By adding some different rules United Nations has survived so far.

There have been hundreds of international and multinational leagues on different issues from health to economy. By the way, setting these kind of leagues generally has two sides. The first one is political, the other side is economical. In time, some economical unions could have some political point of views and vice versa.

Like French Revolution another great development of the history was Industrial Revolution which took place in the 19th Century. The states which produced and directed the machines in this era were able to direct the nations and the world. This period was also the base of the technological and social improvements (Yıkıcı, 2020). The states which were not able to adapt the process could not survive in the following decades. They collapsed economically because of being consumers, not producers.

Throughout the history European countries could not get on well with each other because of some religious problems or sometimes colonial occupations. They have been rivals to each other to get more advantages. Catholic Church started wars against Othodox Christianity. Portugal and Spain were the first samples of Colonialism. Britain and French armies fought several times. French and German troops invaded their lands mutually. British Kingdom founded a different sect against Catholism. Martin Luther and his pursuers announced Protestantism against Vatican Church and religious fights emerged in Europe. All those fights and wars made the European countries lose power. The biggest and catastrophic destructions for all humanity and European countries were The Great War and II.nd World War.

North Atlantic Treaty Organization (NATO) and Turkey

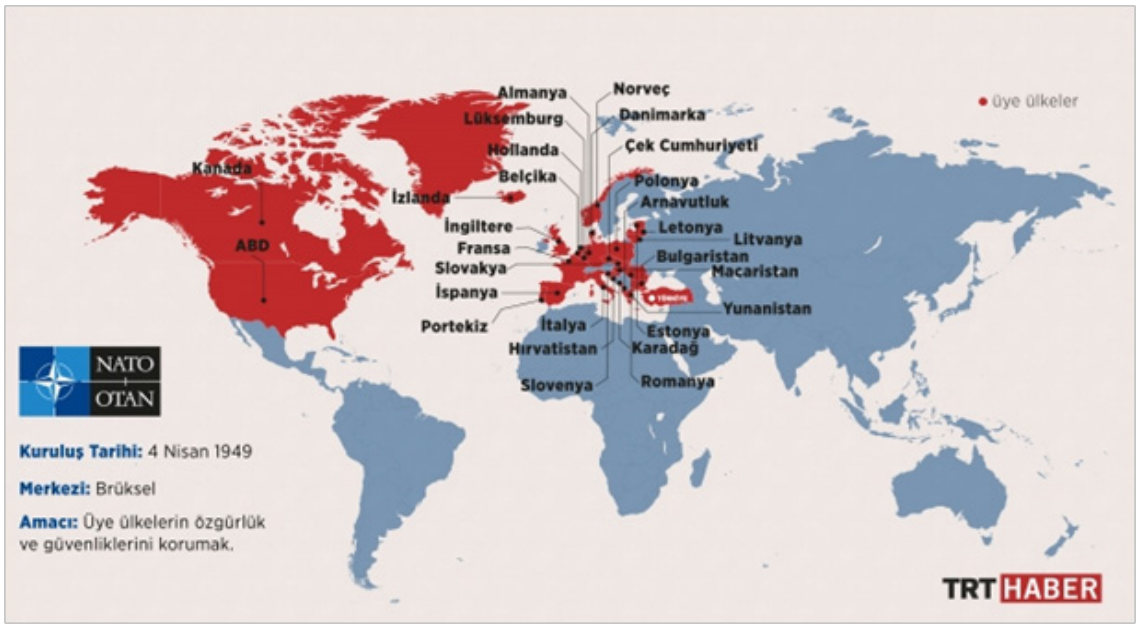
In order to protect its territorial integrity Turkey did not get into the catastrophic IInd World War. Western countries and U.S.S.R. beat the Nazi Regime together and won the war. After winning the war roles changed and the block against urgent enemy decomposed and they turned to be enemies to each other. Getting a side was an obligatory situation for young Turkish Republic. Turkey had to join the westerner powerful organization not to be occupied by the Soviet army. Because just after the II.nd World War the Soviet armies occupied many states in the north and east parts of the Black Sea which were away any kind of protection against U.S.S.R. .

Soviet Union was not eager to maintain non-aggresion treaty between Turkey and U.S.S.R. which was about to expire on 7 November 1945. They wanted to refresh the relationships according to new conditions and serious differences occured after the war (Turan 1999). Soviet side declared Turkey to make some changes in the borders between Turkey and U.S.S.R. and they said they wanted to direct the Straits with Turkey by revising Montreux Treaty. Rejecting these demands by Turkey was not satisfactory for Soviets and they repeated their wills by declaring a second memorandum, but Turkey rejected this memorandum too (Akkaya, 2012).

Soviets started an official threat on Turkey's Straits and demanded some cities in the north-east part of Turkey (Özalp, 2018). Soviet Union's position was like a clamp against Turkey. It was in the east border of Turkey and it occupied some regions in Balkans. Losing the sovereignity was an inevitable approaching result for Turkish state.

The North Atlantic Treaty Organization was founded in Washington D.C. on 4 April 1949. Turkey could join to the organization in 1952. Seeing the danger coming from the Soviet Union Turkey insisted on joining NATO but she was rejected in 1949. The founders of the organization, Britain and U.S.A., did not want to accept Turkey at first but promised to help against any danger. In 25 June 1950 a war in Korea started. U.S.A. started to fight against communists who were supported by China and U.S.S.R. Turkish Prime Minister Adnan Menderes announced to send 4500 soldiers to support American troops on 25 July 1950. But the decison was held during the parliament holiday and it could be voted just in November 1950 (Akkaya, 2012). Having been rejected by NATO the government of the period found this position as an opportunity and the decision to participate in the war, which was not negotiated in the parliament, has been discussed since then.

Turkey has got an identity as a "Westerner Country" by providing defense and security to the organization. During the Cold War between West and East, basicly America and Soviet Union, NATO was an internationally prestigious organization for Turkish people and politicians adding to its characteristics supplying safety via its powerful armies which had strong and developed weapons and it was compatible to the Westerner Identity which Turkish people and authorities had demanded to obtain. However, it was a source of danger because of being at the border of U.S.S.R. and it was not discussed enough by Turkish public opinion (Kibaroğlu, 2017).



Current NATO Map published by TRT Haber (Aydoğmuş, 2019).

NATO, which was established on the axis of security policies against Warsaw Pact established by Soviet Union, has become quite controversial in terms of vision, mission and founding purposes after the collapse of the Soviet Union. The discussion was carried out in a way that the Cold War was over, the threat disappeared, NATO's military wing was no longer needed, it went beyond its founding purposes and served the United States benefits (Özalp, 2018).

Even during the Cold War there were some problematic situations. Some of the European countries did not want Turkey to be a member of the organization. Turkey's geographical position was an advantage for the members because she would be a shield front for them against U.S.S.R. Turkey was neighbouring to some Mid-East countries. It was always open to the attacks of Middle East. Although the members' security was announced to be preserved against an enemy's attack in the 5th and 6th entries, Turkey was limited by Soviet or Bulgarian attacks, not other countries' attacks (Kibaroğlu, 2017).

European Union and Turkey

Being the leader of the western civilization European countries have always demanded to be the directors of industrial and economical developments. They launched and maintained the national states by French Revolution, production processes by Industrial Revolution and Colonialism after conquerring new lands in America, Australia and Africa.

Vienna Congress in 1815 brought a peace environment across Europe and war was carried to Asia and Africa. Peace in Europe was the first rule of Colonialism. Though, there had always been the probability of clashes among Great Powers dealt with the problems about colonies, plenty of alliances occured via imperialism: Triple Entente was not just an alliance towards German, but also an alliance towards the colony people of German. An appropriate example for this was the Indepence Declaration of the United States after 1776. It is possible to say, that year lots of signs of a new civilization started to be seen. Europe notion developed by inventing a new identity to have a position between America and Russia. In this respect new ideas dealing with Europe Federation emerged in the XIX. th Century (Delanty, 2013).

The emergence of unification movements were seen between Britain and France to form a trade agreement. However, it had to stop because of the harsh results of the French Revolution. In 1815 Prussia and France abolished the internal customs by signing Maasen Tariffs between their states. Britain and France found the economical strenght by lowering the customs via agreements (Kıraç & İlhan, 2013). These attempts have never been strong to form a union and it started to be a necessity and felt by the dominant sides during the II.nd World War (Tatoğlu, 2006). Efforts to create a European Union with its philosophical bases gained a real character with the establishment of the European Coal and Steel Community. This corporation, which was founded by Jean Monnet who was the President of French Planning Organization, aimed to create a union among the

European countries by removing the national trade borders with coal and steel (Kıraç & İlhan, 2013).

Robert Schuman, the French Foreign Minister of the period was affected by the thoughts of Monnett who is admitted as the father of European Union. Schuman proposed to set up a supranational community with the responsibility of producing and using the resources of coal and steel which are the basic inputs of the war industry. This was the beginning of the European Union. As it can be seen, the target of the union was economical at first, but in time she obtained a political character as well. Today the union has reached 27 (now 28) members. Even the founders of the community could not estimate the development of the Union. The union is not accepted as a perfect one, but it is known and accepted as one of the best models of multinational unions (Tatoğlu, 2006).

The treaty establishing the European Coal and Steel Community, paving the way for the European Union, was signed by France, West Germany, Italy, Belgium, Holland and Luxembourg on 18.April.1951. It started to be valid on 23 July 1952. The Treaty is expected to be valid for 50 years and expired on 23 July 2002. ESCS within the new EU order brought by the 1992 Maastricht Treaty. The treaty establishing European Economic Community and the treaty establishing European Energy Community "Rome Treaty" was signed by 6 states, which had set up ESCS before, on 25 March 1957 in Rome. EEC was aborted by 2009 Lisbon Treaty because European Union which was established in 1992 Maastricht Treaty was including the functions of EEC. However, EURATOM has not been abolished yet, it is seen as the peaceful basis of European nuclear Works (Denk, 2016).

This economic integration movement has become an extremely important structure over time. Since the establishment of the Republic in 1923 Turkey has always turned her face to the West and Europe as well. Turkey applied to EEC on 31 July 1959 to be a member. The European integrity movement has been called as the biggest peace project throughout the history. Turkey aimed to develop in economical aspects by turning her side to the West Block after the II.nd World War because she wanted to have a peaceful and safe environment. Another important point in Turkish aspect was the probability of the acceptance of Greece. Greece applied to the Union on 15 July 1959. It would have been a power balance problem if Greece was accepted to the Union but Turkey was not. The authorities of the European Union started the investigations on Turkey's application on 11 September 1959, but signing the Ankara Agreement could be possible 4 years later. Because a military coup happened in Turkey on 27 May 1960 and the members of the Union lost their motivation about Turkey's democracy. It was not an agreement to accept Turkey as a member, but just a commercial agreement including some economical aid packets and an observation process of Turkey's political and economical development for the Union (Uysal, 2001). This commercial agreement was signed as an Association agreement. Europen Union signed these kind of agreements with the applying states to prepeare them for membership process. Nevertheless, European Union has signed some

agreements with some countries which are not in Europe Continent. Lome Agreement which was signed between the Union and Morocco and Algeria is another example for those. A Counsil Association between Union and Turkey was held to follow the developments and to run the relationships and this has been the position of Turkey so far (Karluk, 2019).

Turkey applied for full membership to EEC on 14 April 1987. The investigation of the application was approved at the meeting of the Council of Ministers of the EEC on 5 February 1990 and a report was prepeared. According to this report, the European Commission did not find it appropriate to start new accession negotiations. In other words, Turkey's application for full membership was not accepted. The problems in Turkey's relations with Greece were shown as an obstacle to Turkey's full membership. However, these problems were not raised as a drawback in the admission of Greece for full membership. The same was true for Cyprus. The European Community and later the European Union consider the problems in Cyprus among the most important obstacles to Turkey's full membership. Nevertheless, these problems did not stop the European Union to start the membership negotiations with Southern Cyprus. The European Union speaks of the law when it suits and breaks the law when it does not suit it (Koç, 2001).

In Turkish public opinion most of the people think that European Union is not fair towards Turkey and embrodiers Turkey. Turkey has got a strategic position between Asia and Europe. Europe does not want Turkey to approach Russian side but does not accept it in the Union because of religious difference, either. There are some real and academic evidences to support this idea. Hüsnü Ezber Bodur mentions this point in his article : "Valery Giscard d'Estaing, the former President of France gave a speech in 2002. In his speech he underlined that Turkey can not be considered as a European country since its capital is not in Europe continent. The inclusion of a country with a different culture and lifestyle would mean the end of the EU. It reveals the dimensions of religious and cultural based prejudices against Turkey's membership in the West." In the next pages of his paper he gives examples like academician Oliver Roy's words telling that even Turkey achieves completing all the principles dictated by EU it is not possible for her to be accepted, because Turkey does not share the Christian culture and heritage (Bodur, 2008).

EU, which has been claiming the integrity among European countries, could not save the federative corporation. Via a plebiscite in 2016 Britain announced her seperation calling Brexit and left the union 60 years after the establishment in 2019 (Şimşek, 2020).

Muhsin Yazicioglu and hıs Plan to set up a Caspian Common Union

Turkish people's and state's aims to be a western country has prepeared the consciousness since the Hatt-ı Sheriff of Gülhane in 1839. Ottomans in the last periods tried to get into any kind of political, scientific and economical organizations established in Europe or other Western countries, so has done the Republic of Turkey. Russia, the biggest enemy

of Ottomans in her last two centuries, and Russian's inheritor Soviet Union which was positioned in the north-east part of Turkey was a threat against Turkish territories. The other south-east and south part is encircled by Middle East states which have been the encounterers because of political reasons in the late Ottoman period and Turkish Republic which has a secular lifestyle. Turkey has never demanded to change religion Islam but always wanted to be far away from the backwardness of middle east countries' which were covered by Islamic appearance. Islam gives a lightning point of view to the person and society in Quran and in the Prophet Mohammed's lifestyle and words, and Turkish people have adopted these deeply. However, it was impossible to improve by an easterner lifestyle according to Mustafa Kemal Atatürk, the founder of Republic of Turkey. Even Ottoman State's authorities tried to change the lifestyle of the society in the last century of the empire (Kösebalaban, 2014).

The motherland of Turkish clans is known as Turkistan and millions of Turkish people live on those lands now and some others live in different parts of Asia, Africa and Europe. This geographical propagation has happened via a voyage of Turks which took thousands of years. Some of Turkish people preferred to live in the homeland and some others wanted to see, conquer and live in different regions after big pressures coming from crowded Chinese armies, or because of the clashes between Turkish brother clans. Some of the Huns went along the north of Black Sea and established European Hun State under the leadership of Attila and they set up a civilazition in East Europe. Bulgarians came to Balkans and decided not to turn back and they have been living there for thousands of years. Some of the Muslim Turks came to Anatolia and taking the territories from Byzantians they established their own empires and they have been living in there under the reign of The Republic of Turkey which they established on their own by the leadership of Mustafa Kemal Atatürk in 1923.

However, the disadvantage for the Anatolian and European Turks who have always turned their faces to the West is forgetting their brothers and their ancestors' works in Türkistan, in Caucasia and in Caspian region. Today millions of Turkish people live there and there is a lack of connection between the West Turks and East Turks.

Muhsin Yazıcıoğlu, who was a politician in Turkey, tried to set up relationships with the Turks living out of Turkey and former Ottoman Empire's regions like Bosnia, Cosovo, Macedonia. He was active in the establishment of Cosovo Independence struggle (Haberler, 2021). He was the leader of a youth organization named as Ülkü Ocakları in his very young ages. The characteristics of this organization was anti-imperialist, anti-communist and Turkish nationalist. In the 1980 military coup he was put into jail and stayed there for 7,5 years and at the end he was acquitted as he was innocent of any crimes in 1987. Finding his freedom, he immediately started his works on serving his ideology of nationalism in Nationalist Work Party. In 1992 he seperated from NWP with some of his friends and established another political party named as Great Union Party in 1993 (Yıkıcı, 2020).

Ülkü Ocakları which Muhsin Yazıcıoğlu directed in the second half of 1970s was basically against EEC and had organized some social and communal activities and published manifests under the name as "No To Common Market" not to join to EEC (Acar, 2018).

After establishing GUP Yazıcıoğlu went on his nationalistic policy and he put a strategy in the Declaration of GUP as: *"Turkey's joining attempt to EU has got a history more than 40 years. Since Turkey applied she has been advised to make economical and jural differences, road maps, adaptation packages and they even have interfered in our internal issues during this process. They confess that EU is a Christian Club. EU which has increased the number of the members to 25 by accepting former socialist countries does not have a mind to admit Turkey. In this position the relationships with EU should be revised and organized again. EU is not a must for Turkey"* (BBP, 2004).

In 2008 he gave an interview and revealed his ideas about EU again. In his words he said: *"EU process is an empty and a dark tunnel. It is waste of time, energy and hope abuse and a world of lies… It was a logical preference 40 years ago because of getting into NATO and the balances in those years. But after 1990 the situations changed and lots of new alternatives emerged for Turkey. If Atatürk lived, he would never tolerate the enforcements of EU. If Fatih saw our position, he would tell the reasons why he had conquerred Istanbul by kicking our fanatic EU supporter heedless politicians… EU is neither coeval civilization, nor the unique hope for us … But EU is a global reality and our relations with EU should be based on mutual benefits… I am definitely against of full membership to EU. It is not a project to improve Turkey, on the contrary it is a weakening and an enserfing project … EU is in need of Turkey, Turkey is not in need of EU. The things we have lost by Customs Union Treaty and the things we have lost in the process to adapt EU are the signs of the things we will lose in the future. No good can come from EU to us, we have to look for our reality and we have to look for our own power"* (Umur, 2018).

Power has been the main motivation of individuals, political, economical or social organizations and states as well. Almost all kinds of relationships between states have based on power. The leagues like EU, United Nations or Warsaw Pact have been estimated to be more powerful. Like all other countries Turkey has wanted to be in the leagues to be more powerful as well.

Yazıcıoğlu was not able to transform the general policy of the state because of not being the leader or a part of the governments. However, he had a big potential on Turkish public opinion. He was accepted as an honest and idealist politician by the people. While he was a young leader of his own political society he gave his messages directly. Having been amused by EU he declared his objections and he announced his opposition to EU and tried to find new alternatives. Establishing a Turanic League was his original ideal. However, Turkey and other Turkish states were not ready to fulfill this idea yet. Even so he was in search of changing the route of Turkey. He declared his rejection to EU and announced

a new perspective as Caspian Common Union. By this project he aimed Turkey to be a bridge between the countries producing energy and the countries consuming energy and to set up historical relations with Turkish World (Umur, 2018).

In one of his speeches he explained his Project: *"Under the leadership of Turkey the 'Caspian Common Union' (CCU) should be formed together with Iran, Russia and Turkish Republics located in the Caspian basin. Yazıcıoğlu stated that if the union is formed the member countries will be able to meet all energy inputs more easily and added 'I believe that this geography will create the strongest balance in the World. Turkey should lead this. We need a 'CCU' against EU and GMP. 'Turkish Standards' should be put forward instead of 'European standards'. He added, 'In architecture, art, literature and in every fields Turkey should be able to say that these are the codes of my civilization. Inspiring by thses civilization codes Turkey needs to establish the dialectic of her own idea, civilization and system."* (Yenişafak, 2007).

Turkey has not been accepted to EU for nearly 40 years, was an important member in NATO just in aspects of her military force, has been limited unlawfully by UN in a need to be defended and was abused by West in many ways while she was trying to be a part of the West. To prevent Turkey's backwardness finding alternatives was a must in Yazıcıoğlu's opinion.

Muhsin Yazıcıoğlu was killed in a suspicious helicopter accident in 25 March 2009. Lots of politicians and journalists have claimed that the event was not an accident, but an assassination by presenting lots of evidences. He was the leader of a small political party but more than 2 million people came to his funeral according to some media resources. Some members of FETO terrorist organization, which tried a military coup in 15 July 2016 and being directed by Fethullah Gülen who has been living in America since 1997, have been accused of Yazıcıoğlu's assasinators (Takvim, 2021). 3 years before his suspicious death he tore a map showing Turkey seperated into pieces like Sevres Treaty in 1918. The map, which had been prepeared and released by Pentagon, was an argument between Turkish military officers having education in Rome College and an American officer. He held a press conference in Ankara and tore the map by saying: "Motherland is a unity and cannot be crumbled." (İHA, 2006).

05.10.2006 GUP Headquarters

He was a respectful and creditable leader and his ideas were always important in the aspects of most of Turkish people. Another interview which he gave before his death was released two months after his unexpected accident. In that interview he had put his ideas clearly again. He said: *"Turkey, acting from its own axis, should draw a national interlance extending to the depths of the Balkans, the Middle East, the Caucasus and Asia and should assume the leading role in this interlance. She should now be the locomotive, rather tahn being jostled behind the European Union train. We must establish the Caspian Common Market. We are in the middle of energy producing and consuming countries. We should make good use of this advantage. We must estyablish Caspian Common Market, which we can call CCU (HOP) against the EU and GMP (BOP). We should develop economic, social and commercial ccoperation with the states in the Caspian Basin. We can do it with Eastern Mediterranean countries such as the Black Sea Economic Cooperation. In addition, Euroasian geography is related, starting from Turkey's own center, a multi - factor, multi – faceted economic and social policy can be followed. We should improve our relations with the Turkish Republics. We must ensure the unity of the alphabet, the unity of language which are said but not done. We must develop cooperation. We have to establish a barter system among ourselves, and by enacting a barter law we should develop an economic model based on mutual barter. We must set up a system where we can trade with our own Money, by making a swap agreement with Russia and the Turkish Republics, by putting our mutual Money in the central banks. So we have to eliminate this dependence on the American dollar. We must fight with the American dollar addiction just as we fight with any kind of addiction. According to the agreement in the Armistice of Mudros dated 30.October.1918 with the conflicting states such as Britain, France and Italy seized our communication at that time. Today, Türk Telekom, our communication system has been sold for 5,5 billion dollars to the westerners and they do not pay even their installments. Is this situation different than Armistice of Mudros? Turkey handed over some of her gains to the imperialists. There are several elements that ensure the independence of states. These are communication, iron and steel and the other is energy. You can not say you are independent if you are foreign dependent in communication, iron and steel and energy. Unfortunately, Turkey has handed over some of her gains to imperialists."* (Çakan, 2009).

A view from Muhsin Yazıcıoğlu's last meeting in Kahramanmaraş's Çağlayancerit District one hour before his suspicious helicopter accident.(Anadolu Ajansı, 2021)

In 1996 an association of Asian countries under the leadership of China and Russia to set up security and commercial cooperation. At first, its name was Shangai Five. Their aim was routing out America and other westerner countries which tried to set up dominance in Asian territories after the collapse of Soviet Union. The five states were Russia, China, Kyrgystan, Kazakhstan and Tajikistan at first. In 2001, Uzbekistan joined this union and the name of the group was changed as Shangai Cooperation Organization (SCO) (Khaleqi & Oghli 2021). Pakistan and India were accepted as the members according to th enlargement policy of the union during the summit in Astana on 8/9 June 2017 (T.C.Dışişleri Bakanlığı, 2021; Congar, 2021).

A map of SCO released by SASAM. (Bozkurt, 2017)

Caspian region was closed to the rest of the world after the Great War and it has been understood that Caspian region is one of the main energy resources of the world after the collapse of U.S.S.R. Therefore, it turned to be a target region for lots countries and organizations, not just for Russia. EU and U.S.A. has some plans to make use of the region. Turkey, which is on the way of energy transfer to European countries, wants to get economical and political benefits arising from its geo-strategical position, too. Turkey's geography lets her to be an advantageous country. It is not only an Asian but also a European country and like a bridge between them. Besides, it is a Balkan, Black Sea, Middle East, Caucasus and a Mediterrenean country. It is one of the rare countries to be a member of OECD, Islamic Cooperative Organization, European Security and Cooperative Organization, G-20, D-8, Black Sea Cooperative Organization and a country negotiating membership with EU. Having a wide scala, Turkey wants to be related to lots of states and organizations to be more powerful and to have more alternatives. The member and observer countries of Shangai Cooperative Organization has 17,5% of the known petrol reservations of the world, 45-50% of the Natural Gas and 45% of the world population. Taking most of the resources in her hands SCO has got a strategical superiority. Turkey

applied to the organization to be a member in 2005 and got the right to be a Dialogue Partner in 2011. The importance of this partnership for Turkey is all the members and observer countries were the members of Warsaw Pact in the past, except Turkey. Turkey is the unique partner of the organization coming from NATO (Hepaktan, 2017).

Maintaining the partnership with SCO without damaging the relations with NATO and EU would give Turkey the chance to have alternatives in her hands. However, Yazıcıoğlu's proposal was somehow different than being a member to SCO. The organization was established in 1996 and got an identity in 2001. But, he talked about establishing a new organization. He mentioned Turkey to be the leader of a new organization. China, which rejected Turkey's membership in 2005, was not a member in his ideal Caspian Common Union. He must have thought China would be a problem for his country and he proposed a new union under the leadership or dominance of Turkey by using the religious, historical and ethnical relations with her brother countries in the region.

Some differences in Turkish Foreign policy have happened after Yazıcıoğlu's suspicious accident. Big events were seen in the geography of Arabic and North African regions. A military coup took the management in Egypt from a government which was elected by the majority of the society. A civil war started in Syria and millions of asylum seekers had to leave their lands and nearly 5 million of people came to Turkey. It was called as 'Arabic Spring'. A military coup attempt was seen in Turkey in 15.July.2016, but it was not succesful. All these big events happened in the regions where Condeleeza Rice described as 22 countries. Losing the trust to the westerners Turkey started to buy military supplies from Russia and U.S.A. reacted Turkey's new relationships by economical sanctions.

Ahmet Davutoğlu, who was the Minister of Foreign Affairs between 2009-2014 and the Prime Minister in Turkey between 2014-2016, wrote a book in 2001 in which he was talking about probable Caspian region activities of Turkey to reach Middle Asian Turkish States in 3 steps. These are:

1-) To ensure the positions of the North Caucasian republics within the Russian Federation should be gradually consolidated and the Caspian Sea- Balck Sea connection can be realized through these republics.

2-) To balance Moscow's influence on Middle Asia and the Caucasus by strenghtening the relations with Tehran in the context of dynamic and rational economic cooperation.

3-) To promote all kinds of cooperation among Middle Asian countries.

According to Davutoğlu, Turkey's setting dominant relationships with the countries in Caspian region would be diffucult on territorial ways. But setting up relations through the connection of the Caspian Sea basin to other sea basins like Black Sea and Mediterrenean Sea can give effective results (Kaya & Kısacık, 2015).

Being a regional actor or a global actor requires being active in foreign affairs. After the collapse of Soviet Union, Caspian region was understood to have lots of hydrocarbon resources. Transfering the natural gas and petrol from Caspian basin to the international markets has been another important point of the issue. The pipeline projects developed to achieve this mission have caused radical changes in geoeconomics and geopolitics of the region (Köten, 2013). The countries on which the pipelines go along will not only be commercially profitable, but also they will have the right on the resources. To transfer the natural gas lots of pipeline projects have been planned and applied. One of the most important among these pipeleine projects is Baku - Tbilisi - Ceyhan pipeline. It started to be active in 2005 (Yatar, 2007). The pipeline which ends in Turkey's Ceyhan route reaches to Mediterrenean Sea and provides geopolitical advantage to Turkey.

CONCLUSION

Yazıcıoğlu's perspective was not just dealt with romantic Turkish nationalism. Having a look to the potential of the region and being aware that the westerners do not want Turkey as a member, he mentioned a new route. Considering Turkey's geopolitical position and appairising the historical, religious and ethnical ties Muhsin Yazıcıoğlu tried to improve the relationships by brother nations and regional forces to find opportunities of alternatives. Caspian Common Union was not limited with commercial or financial benefits. This kind of a union would change Turkey's historical route to a New World Order and Turkey would be a regional or a global leader. NATO has been told to have finished her role after the Soviet danger and has approached with a double standard to Turkey. EU was told to be the biggest peace project of the history, but the biggest world wars started in Europe and the corporation which claimed to unify all the European countries could not save her own unity after the split of Britain. EU has never tended to accept Turkey and amused her with promises which have never ended and none of which have ever come true. Some developments relating Turkey in Caspian region have happened before and after Muhsin Yazıcıoğlu's proposal. He wanted Turkey to take the initiative in Balkans, in the Middle East and the Middle Asia where Turks or Turkish related socities have been living. His aim was building a Turkish hinterland. However, the union he wanted to be established has not reached a real identity.

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Chapter 18

TURKEY'S ENERGY SECTOR OUTLOOK FOR THE PERIOD 2000-2020

TURKEY'S ENERGY SECTOR OUTLOOK FOR THE PERIOD 2000-2020

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INTRODUCTION

We can state that the types of energy used at present are similar to the types of energy used by the first humans. In this context, the first energy sources, wood fire, solar, wind, and water, are used with different production methods today. The process that started with the increase in wood/charcoal prices in London affected the mode of transportation and triggered the development of rail systems. Afterward, the industrial revolution that started in Europe with the spread of steam engines and oil spread to the whole world. Over time, oil has become an industry where many products are produced that affect the world economy and make life more comfortable in different fields.

Energy sources in the literature; Primary and secondary energy sources are classified in different ways: non-renewable (traditional) and renewable (alternative) energy sources. Primary energy sources; are energy sources that occur in nature without any cycle and transformation, except cleaning and decomposition. Examples of primary energy sources are coal, crude oil, sunlight, wind, flowing rivers, vegetation, and uranium. Secondary energy sources are energy resources that become suitable for use by converting primary energy resources. Electrical energy is an excellent example of secondary energy sources (Saray, 2019). When considered for non-renewable (traditional) energy sources, actually no energy source is non-renewable. However, because fossil fuels take a long time to regenerate, they are called non-renewable energy sources. Examples of non-renewable energy sources are oil, coal, and natural gas (Çepik, 2015) and nuclear energy (Deringöl, 2021). Renewable (alternative) energy sources, on the other hand, can be defined as energy sources that are constantly present in nature and remain unchanged in their cycle. These renewable energy sources that do not cause environmental pollution are solar energy, wind energy, geothermal energy, hydraulic energy, wave energy, hydrogen energy, and biomass energy (Deringöl, 2021).

Among the primary duties of the states is to manage the processes for increasing production and transportation capacities. In general, we can express these processes as the preparation of development and industrialization plans, the determination of urbanization policies, and the welfare of societies. Energy, which has components for the effective management of processes, economic, political and country defense, is a strategic sector at present (İskenderoğlu, Karadeniz, & Ayyıldız, 2017).

The increasing population and industrialization rate in the world from past to present time cause the supply and demand balance in economies to constantly deteriorate and, accordingly, the energy need of global trade and production processes to increase. It can be stated that meeting this energy need, which arises due to the increase in demand, healthily is one of the most fundamental duties of the country's administrations (Orçun, 2019).

For sustainable development, energy consumption, which is an indicator of development, the way of production, method, and environmental effects of energy should be considered. When the use of energy resources is evaluated from an economic point of view, it should bring benefits in ensuring development and raising the welfare level of society. From an environmental perspective, the use of fossil fuels, which cause problems such as increasing environmental pollution, greenhouse gas emissions, and global warming, should be limited. In general, making optimum use of limited energy resources, investing in renewable energy resources, reducing total energy costs, and preferring environmentally friendly technologies are essential criteria for regional and local energy policies (Bayraç, 2012).

Energy resources are crucial for developing countries like Turkey, which use energy as an intermediate input in their industry. On the other hand, while the number of energy supplier countries globally is limited, all countries require energy. In this respect, obtaining uninterrupted, safe, and cheapest energy for a country can be defined as the optimal target. Countries such as Turkey, which has scarce resources in terms of energy, should determine their energy supply security as a priority target. Turkey can easily reach this target by using the geographical advantage between energy supplying countries and energy-demanding countries. The most critical problem of Turkey is the inability to diversify its energy portfolio (Kandemir & Tuncer, 2020).

Energy deficit and foreign dependency on energy may lead to strategic political problems in the Turkish economy and increase the current account deficit problem, which threatens financial stability. In other words, the current account deficit problem, one of the central dynamics of energy imports in Turkey, disrupts the macroeconomic balances, and the concern of having problems in financing negatively affects the growth rate (Varlık & Yılmaz, 2017).

After 2001 for the Turkish economy is the 'Post-Washington Consensus' period, which constitutes the second phase of the neoliberal restructuring in which the principles of 'market regulation for sustainable growth under globalization, 'competition management' and 'strong regulatory bodies for good governance' are adopted. In this period, the establishment of the Electricity Market Regulatory Authority (EPDK) with the Electricity Market Law No. 4628 in 2001 in the energy sector and energy market legislation; The Law No. 6446, which came into force as a continuation of Law No. 4628 in 2013, the creation of secondary legislation, and the final regulations were carried out through the

restructuring of institutions with the transition to the presidential government system (Voyvoda & Voyvoda, 2019).

In the world, the increasing energy demand after the industrial revolution has affected countries in different ways. Especially after the oil crisis in 1973, the energy crisis in 1979 caused a recession on a global scale. Increasing energy demand has caused economic problems and triggered environmental problems, especially in developing countries.

The major problem in the Turkish energy sector is the foreign dependency of the sector due to the intense use of primary energy resources (petroleum, natural gas). This problem can be solved by developing investments and policies for renewable energy sources. This section discusses Turkey's energy sector performance in the 2000-2020 period with European countries. Hierarchical clustering analysis was made using the data of the countries' per capita primary energy consumption, oil, natural gas, coal consumption, renewable energy and electricity production values, carbon dioxide emission rate, and the results were interpreted.

Cluster Analysis

Cluster analysis ensures that data similar to each other according to the selection criteria are included in the same cluster in the data set whose class characteristics are unknown. As a result of the analysis, a heterogeneous structure is formed between the different clusters and a homogeneous structure within themselves (Akpınar, 2014).

In their study, Yakut et al. (2021) used hierarchical and non-hierarchical clustering analysis techniques regarding macroeconomic indicators related to energy use; they found that Turkey, Brazil, Chile, and Uruguay have a similar structure. (Yakut, Yazgan, Bacaksız, & Fikir, 2021).

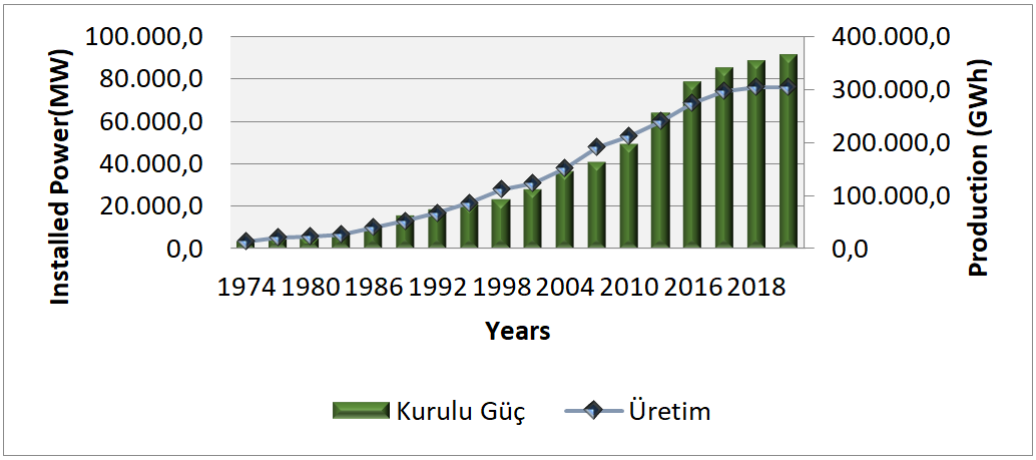
Looking at the studies made with cluster analysis, Tunalı and Aytekin examined Turkey's foreign trade in their study in 2017. In 2020, Yıldız, Aydoğan, and Kartum evaluated Turkey's international position with cluster analysis. Danacı and Koçtürk in their study in 2017 stated; free zones in Turkey were analyzed with hierarchical clustering analysis, and they determined the area and labor productivity of each free zone by using foreign trade statistics (Danacı & Koçtürk, 2017). Çelik and Kıral discussed the housing demand of foreign residents in Turkey with panel cluster analysis (Çelik & Kıral, 2018). Çekerol (2020) discussed the logistics performances of OECD countries and other selected countries with cluster analysis. Demirci and Ayan evaluated the similarities in the health infrastructure of OECD countries with cluster analysis and their performance with the TOPSIS method, one of the multi-criteria decision-making methods (Değirmenci & Ayan, 2020).

Turkey's Energy Sector Outlook

Increasing awareness of sustainable development worldwide since the 1990s has led to changes in the energy policies of countries. If the current consumption level continues, it is estimated that oil will run out in 50 years and natural gas in 200 years (Yıldırım, 2020).

According to Turkish Electricity Transmission Corporation (TEİAŞ) data, Turkey's installed power and production development over the years is given in the chart below (Figure 1). In the 2000-2019 period, we see that the installed power value in our country has increased significantly. According to Figure 1, we can state that the installed power and production in Turkey increased approximately 2.5 times in the period 2001-2019.

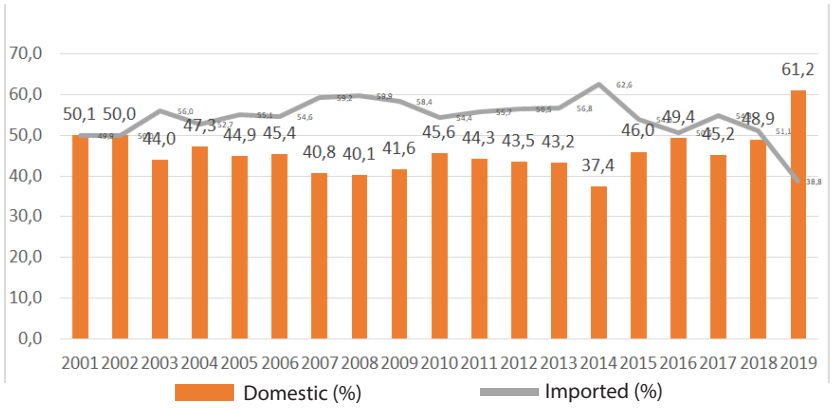
Figure 1. *Change of Installed Power and Production in Turkey by Years*



Source: (TEİAŞ, 2021)

The ratio of domestic/imported energy in Turkey's electrical energy production for 2001-2019 is given in the chart below. In 2001, the ratio of domestic-imported resources was approximately equal.

Figure 2. *Domestic-Imported Resource Rates in Electricity Production for 2001-2019 Period*



Source: (TEİAŞ, 2021)

This situation increased over the years, and until 2015, the rate of imported energy increased and reached the highest level of 62.6%. However, with the new investments after 2015, the rate of domestic resources reached 61.2% as of 2019.

According to the Electricity Markets Operation Joint Stock Company (EPİAŞ) data, 584 licensed power plants were invested in Turkey in 2003-2020, and additional installed power of 7851 MW was obtained. The values of the power plant investments are given in Table 1. Accordingly, hydroelectric and wind power plants produce approximately 60% of the 7851 MW obtained in investments.

Table 1. Data of 2003-2020 Licensed Power Plants

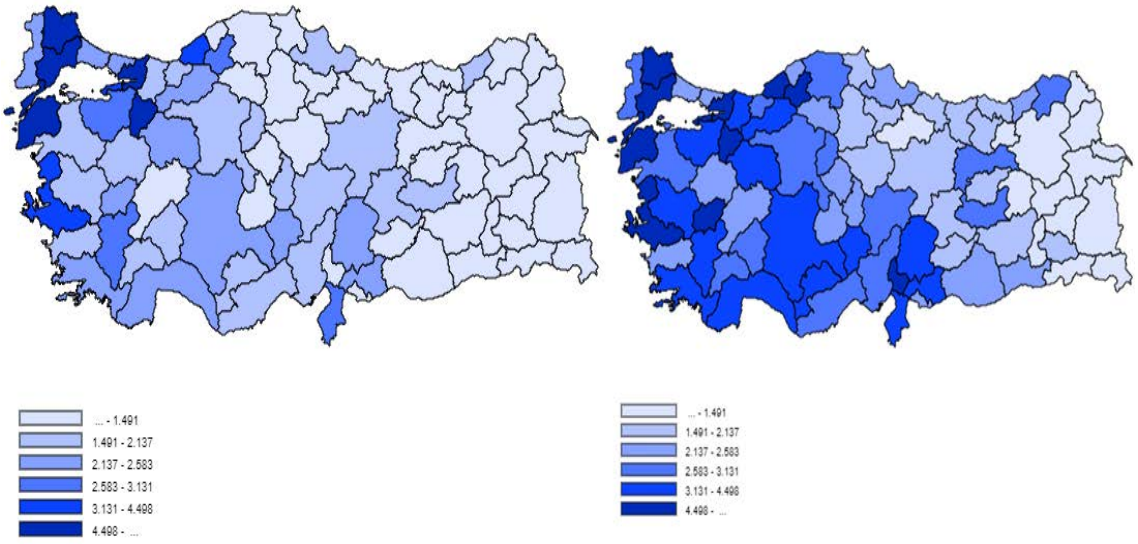
Fuel Type	Number	Total Additional Installed Power (MW)	Total Additional Power, Ratio %
Waste Heat	1	9	0,11
Bio Mass	141	440,591	5,61
Natural gas	23	948,448	12,08
Solar energy	56	386,878	4,93
Hydro Electric	95	2749,291	35,02
Wind power	237	1926,65	24,54
geothermal	22	365,77	4,66
Coal	9	1024,604	13,05
Total	584	7851,232	100

Source: (EPİAŞ, 2021)

Energy in Turkey is increasing depending on the demand. With the investments made in recent years, energy production has been increasing and diversifying. Electricity consumption is mainly directly affected by population growth and industrial production.

The increase in energy demand in Turkey also increases energy imports. Therefore, the effect of foreign dependency on energy causes the current account deficit to be triggered. In this case, the creation of national and renewable energy resources is of great importance both in terms of the country's economic performance and supply security and continuity (Alpdoğan, 2021).

Figure 3 *Electricity Consumption in Turkey 2007-2019*



Source: (TUIK, 2021)

Figure 3 shows the electrical energy use of the provinces in 2007 and 2019. When Figure 3 is examined, it can claim that while there are significant increases in the use of electrical energy in the western and central regions on a regional basis, there is no significant increase in the eastern region.

Turkey's Energy Performance

Primary energy consumption decreased by 4.5% in 2020 due to the effects of the Covid-19 pandemic conditions worldwide. This situation was recorded as the most significant decline after the Second World War. In addition, carbon emissions from energy use fell by 6.3% to the lowest level since 2011. It can be said that there is a significant decrease in oil demand to the reduction of Primary Energy consumption. In general terms, oil and natural gas prices have decreased, while the global energy demand has increased in China, it has decreased significantly in other countries, especially in the USA, India, and Russia. On the other hand, there has been an increase in production based on renewable energy sources (wind, solar, hydroelectric) (Energy, 2021).

Data set

Data were obtained from the bp Statistical Review of World Energy report. The data were organized according to the criteria in Table 2 of the European countries for 2000 and 2020 and analyzed with the hierarchical k-means method in the R program. The aim is to include the carbon dioxide emission rate among the criteria and reveal which countries in the data set adopt more environmentally friendly and sustainable development policies in the worldwide drift towards renewable energy.

Table 2 Criteria

Number	Criteria
1	Primary energy: Consumption per capita**
2	Carbon Dioxide Emissions
3	Oil: Total liquids consumption in thousands of barrels per day*
4	Natural Gas: Consumption *
5	Coal: Consumption*
6	Renewables: Consumption*
7	Electricity Generation*

***per capita, *EJ*

Source: (BP, 2021)

We can summarize the processing steps of K-means clustering methods as follows (Kassambara, 2017).

1. Compute hierarchical clustering and cut the tree into k-clusters

2. Compute the center (i.e the mean) of each cluster

3. Compute k-means by using the set of cluster centers (defined in step 2) as the

initial cluster centers

Note that, k-means algorithm will improve the initial partitioning generated at the step 2 of the algorithm. Hence, the initial partitioning can be slightly different from the final partitioning obtained in the step 4.

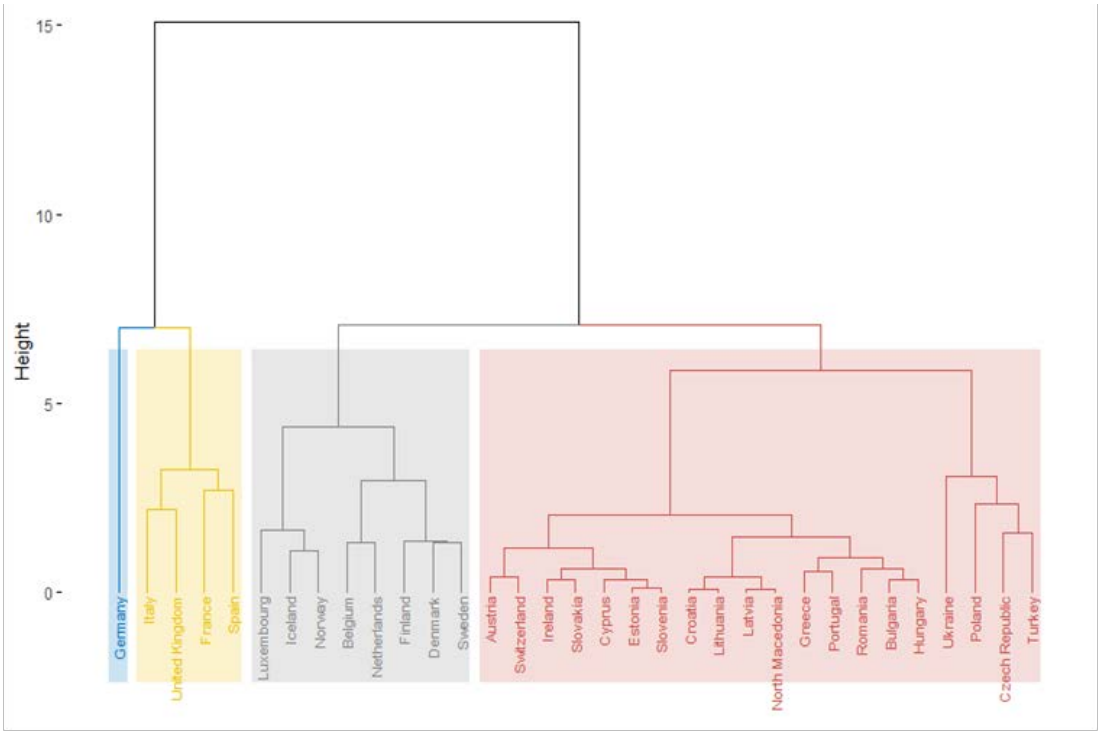
Table 3. Energy consumption data for the year 2000

Country	PrimaryEnergy*	Co2Emission	Oil *	NaturalGas	CoalConsumpt	Renewable *	ElectricityGenerati
Austria	171,00	63,55	0,51	0,28	0,15	0,0167	61,80
Belgium	259,15	136,29	1,29	0,56	0,32	0,0058	84,01
Bulgaria	97,18	43,43	0,18	0,12	0,26	0,0000	40,92
Croatia	77,55	17,47	0,17	0,09	0,02	0,0000	11,28
Cyprus	115,49	7,98	0,11	0,00	0,00	0,0000	3,37
Czech Republic	165,54	124,10	0,34	0,31	0,89	0,0077	73,47
Denmark	158,54	57,53	0,44	0,18	0,17	0,0554	36,05
Estonia	138,88	17,23	0,05	0,03	0,12	0,0001	8,51
Finland	244,24	58,87	0,46	0,14	0,21	0,0867	70,47
France	187,24	381,50	4,10	1,50	0,59	0,0435	539,95
Germany	175,76	854,43	5,65	2,99	3,57	0,1523	576,56
Greece	120,94	102,60	0,85	0,07	0,38	0,0045	53,84
Hungary	98,38	55,32	0,29	0,40	0,16	0,0007	35,19
Iceland	410,95	2,78	0,03	0,00	0,00	0,0132	7,68
Ireland	164,16	43,59	0,36	0,14	0,11	0,0034	23,98
Italy	132,74	434,38	4,05	2,44	0,52	0,0668	276,63
Latvia	56,24	6,95	0,05	0,05	0,01	0,0001	4,14
Lithuania	79,64	10,89	0,10	0,09	0,00	0,0000	11,43
Luxembourg	306,82	9,04	0,10	0,03	0,00	0,0005	1,17
Netherlands	227,30	216,20	1,75	1,48	0,33	0,0285	90,18
North Macedonia	54,20	8,74	0,04	0,00	0,06	0,0000	6,81
Norway	444,05	33,94	0,38	0,15	0,04	0,0029	142,98
Poland	94,96	299,78	0,87	0,42	2,35	0,0023	145,18
Portugal	101,64	61,35	0,68	0,08	0,16	0,0155	43,76
Romania	67,87	88,86	0,42	0,57	0,31	0,0000	51,93
Slovakia	144,31	36,33	0,15	0,24	0,18	0,0000	31,16
Slovenia	140,59	14,00	0,10	0,03	0,06	0,0007	13,62
Spain	133,79	309,32	2,97	0,64	0,88	0,0654	224,47
Sweden	251,38	57,74	0,69	0,03	0,11	0,0456	145,58
Switzerland	179,31	43,11	0,53	0,10	0,01	0,0085	67,33
Turkey	48,90	205,69	1,34	0,50	0,94	0,0027	124,92
Ukraine	116,38	335,91	0,51	2,67	1,61	0,0001	171,45
United Kingdom	162,25	566,37	3,44	3,65	1,54	0,0483	377,07

Source: (BP, 2021)

Data for the year BP 2000 are given in Table 3. As can be seen in the data set, renewable energy sources are not widespread compared to other sources, and the consumption value is relatively low. Turkey ranks 11th in electricity generation, 20th in renewable energy consumption, 25th in carbon dioxide emission rate, and lasts in primary energy resource consumption per capita. Germany is differentiated from other countries by ranking first in electricity production, renewable energy sources, coal, oil use, and carbon dioxide emission rates (Figure 4).

Figure 4. *Cluster Dendrogram-year 2000*



Turkey is in the largest cluster in terms of energy consumption performance, although the Czech Republic, Ukraine, and Poland are familiar. Developing countries come to the fore in the cluster where Turkey is included. We can express the countries with similar structures as follows: (Austria, Switzerland),(Ireland, Slovakia) (Cyprus, Estonia, Slovenia) (Croatia, Lithuania, Latvia, North Macedonia) (Greece, Portugal) (Bulgaria, Hungary).

As stated earlier, Germany, which has the highest value in many criteria, differed from other countries.

Italy, the United Kingdom, France, and Spain were included in a similar and different cluster. When we look at the other cluster (Luxembourg, Iceland, Norway), (Belgium, Netherlands), (Finland, Denmark, and Sweden), they have a similar structure and are included in the same cluster.

Table 4. Energy consumption data for the year 2020

Ülke	Primary Energy	Co2Emission	Oil	Natural Ga	Coal	Renewable	Electricity Generatic
Austria	153,63	55,27	0,48	0,31	0,09	0,14	64,36
Belgium	189,03	88,74	0,93	0,61	0,11	0,23	85,62
Bulgaria	99,29	35,82	0,19	0,11	0,17	0,05	45,84
Croatia	79,58	15,28	0,13	0,10	0,01	0,03	13,05
Cyprus	84,09	6,98	0,09	0,00	0,00	0,01	4,65
Czech Republic	143,58	85,12	0,37	0,30	0,49	0,09	84,36
Denmark	101,93	26,49	0,26	0,08	0,03	0,21	45,60
Estonia	140,49	14,76	0,05	0,02	0,10	0,02	9,73
Finland	197,86	39,00	0,35	0,07	0,13	0,19	82,66
France	133,35	250,91	2,68	1,46	0,19	0,68	574,87
Germany	144,55	604,84	4,21	3,12	1,84	2,21	639,57
Greece	95,97	58,24	0,51	0,21	0,11	0,14	60,79
Hungary	100,20	45,48	0,33	0,37	0,07	0,06	35,86
Iceland	601,83	2,59	0,03	0,00	0,00	0,05	9,92
Ireland	124,56	32,78	0,27	0,19	0,03	0,12	27,50
Italy	96,97	287,10	2,13	2,44	0,21	0,67	314,09
Latvia	76,93	7,28	0,07	0,04	0,00	0,01	4,89
Lithuania	91,31	11,91	0,13	0,08	0,01	0,03	12,48
Luxembourg	229,41	8,79	0,10	0,03	0,00	0,02	4,33
Netherlands	196,82	175,83	1,51	1,32	0,18	0,33	98,83
North Macedonia	48,90	7,22	0,04	0,01	0,04	0,00	7,01
Norway	355,97	31,71	0,37	0,16	0,03	0,11	121,40
Poland	106,03	279,49	1,28	0,78	1,67	0,27	161,74
Portugal	91,46	41,27	0,41	0,22	0,02	0,17	49,04
Romania	69,19	66,25	0,44	0,41	0,15	0,10	62,70
Slovakia	114,11	26,43	0,16	0,18	0,08	0,03	31,23
Slovenia	129,06	11,58	0,08	0,03	0,04	0,01	15,12
Spain	106,35	220,24	2,21	1,17	0,07	0,77	299,45
Sweden	217,78	45,41	0,55	0,04	0,07	0,41	143,30
Switzerland	124,55	32,41	0,37	0,12	0,00	0,05	63,86
Turkey	74,58	369,45	1,82	1,67	1,66	0,45	176,30
Ukraine	75,77	177,20	0,45	1,06	0,98	0,09	193,38
United Kingdom	101,56	317,15	2,39	2,61	0,19	1,20	397,28

Source: (BP, 2021)

According to 2020 data, Turkey ranked 2nd in carbon dioxide emission rate, 3rd in coal consumption, 4th in natural gas consumption, 6th in oil consumption, 7th in primary electricity production and renewable energy consumption per capita, and 32nd in primary energy use.

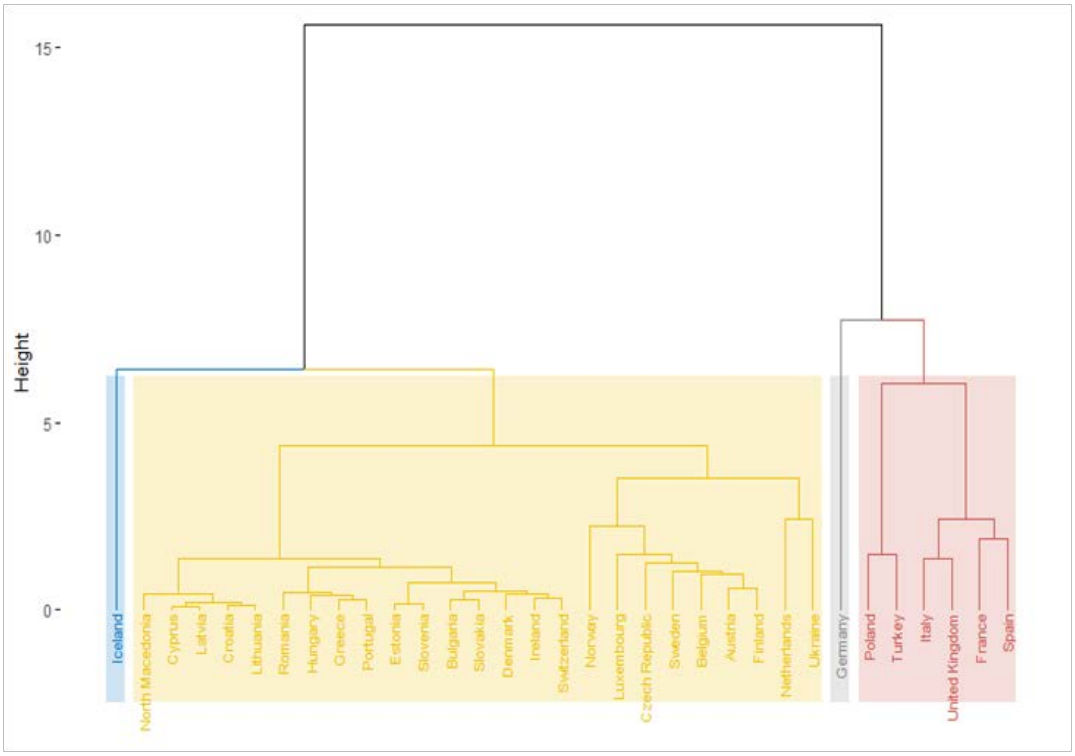
The development of Turkey in the period of 200-2020 is given in the table below. We can state that the energy consumption rate of renewable energy sources has increased at a record level. While a negative increase was observed in the carbon dioxide emission rate, significant improvements were achieved in other criteria.

Table 5. Change rates in the Turkish energy sector for the period 2000-2020

Year	Primary Energy	Co2Emission	Oil	NaturalGas	Coal	Renewables	Electricity Generation
2000	48,90	205,69	1,34	0,50	0,94	0,00275	124,92
2020	74,58	369,45	1,82	1,67	1,66	0,45	176,30
increase rate %	152,50	179,61	136,10	332,45	176,38	16248,29	141,13

The dendrogram of the cluster analysis is given below.

Figure 5. *Cluster Dendrogram-year 2020*



The cluster structure has changed in the dendrogram obtained by hierarchical clustering analysis with the data of 2020. Turkey has a similar structure to Poland and approaches developed countries such as Italy, United Kingdom, France, and Spain. Iceland, which ranks first in primary energy consumption per capita, is separated from other countries. In 2000, Germany was separated from other countries by taking first place in electricity production, renewable electricity production, coal, natural gas oil consumption. In the cluster formed by other countries, respectively (North Macedonia, Cyprus, Latvia, Croatia, Lithuania), (Romania, Hungary, Greece, Portugal),(Estonia, Slovenia, Bulgaria, Slovakia, Denmark, Ireland, Switzerland), (Norway, Luxembourg, Czech) Republic, Sweden, Belgium, Austria, Finland, Netherlands, Ukraine).

CONCLUSION

Energy deficit and foreign dependency on energy are among the leading causes of the current account deficit problem in the Turkish economy. In order to eliminate this problem, the Turkish energy sector has undergone structural changes in the 2000-2020 period. Investments made in the field of renewable energy continue to increase.

According to hierarchical clustering analyses for 2000-2020, Turkey has positively differentiated from countries with a similar structure (the Czech Republic, Ukraine, and Poland) in 2000, especially renewable energy consumption and electricity production indicators. With this transformation, it can be said that although it has a similar structure to Poland according to 2020 data, it approaches Italy, the United Kingdom, France, and Spain. In this period, Turkey's energy performance has been positively affected by investments in renewable energy. It can claim that foreign dependency has partially decreased as domestic energy resource use in the Turkish energy sector has reached 61%. However, it is not considered sufficient when this situation is evaluated in terms of carbon dioxide emissions. In addition, according to the Ember Energy report, Turkey is among the countries that are adversely affected in terms of SO2 (sulfur dioxide) and NOx (azote) pollution originating from electricity generation from coal (Alpaslan, 2021).

Energy consumption is an indicator associated with development. More energy is required for more investment. The global expansion of the use of environmentally friendly renewable energy for "Sustainable Development" entered our lives in the 1970s and is the critical concept of today. Just like the global reaction to the Covid pandemic, reactions to global warming and carbon dioxide emissions should be shown, and precautions should be taken.

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Chapter 19

DEVELOPMENT OF HEALTH INFRASTRUCTURE IN TURKEY BETWEEN 2000-2020

DEVELOPMENT OF HEALTH INFRASTRUCTURE IN TURKEY BETWEEN 2000-2020

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INTRODUCTION

The word patient means "a person whose physical or mental health is impaired due to illness, accident or injury and needs to be treated", and hospital means "health institution where inpatient or outpatient diagnosis, treatment and care services are provided by physicians, nurses and other health workers". While the understanding of health and medicine, which was previously recorded in the person of doctors, appears in mythology and the ancient world, it is possible to come across health gods or deified doctors, which are also based on individuals (Gürel and Akşit, 2018).

In pre-Islamic Turkish medicine, similarly, patients were treated with magical medicine by means of people who were called "kam" or "shaman" and who were attributed with holiness, and then with herbal and other methods applied by people who took the name "otacı" or "atasagun". The understanding of health and medicine, which evolved into an institutional understanding during the Great Seljuk period, reached facilities such as darüşşifas and nursing homes. He got into medical faculties at the beginning. This wave of development continued until higher education and the establishment of the Ministry of Health in the Republican years (Gurel and Özşenler, 2019).

In addition to the policy of institutional structuring and gathering health institutions under one roof, which is still implemented under the name of "Health Transformation Program" in the Health Policies Center after 2003, among its objectives, special attention should be paid to maternal and child health, family medicine and preventive medicine practice, in areas where there is a shortage of health personnel. There is an uninterrupted development process with the fulfillment of the need and the initiation of the e-transformation work in health in parallel with the developments in technology (saglık.gov.tr).

Among the main outputs of the Health Transformation Program is that the results of the applications provide an improvement not only for the service providers but also for the service recipients. Patients who have gained rights such as patient satisfaction, patient safety and choosing a physician have the opportunity to receive service in a more comfortable atmosphere. The right to health, which is among the 2 generation rights among the human rights, which is counted among the social rights and is categorized as 3 generations, is included in the 56th article of the Turkish Constitution: “Everyone has the

right to live in a healthy and balanced environment. It is the duty of the State and citizens to improve the environment, protect environmental health and prevent environmental pollution. In the article that started with the provision of “The State is to ensure that everyone lives their lives in a physical and mental health; It organizes health institutions to plan and provide services from a single source in order to realize cooperation by increasing savings and efficiency in human and material power.” He assured it. Again, in the continuation of the same article, it has undertaken the duty of supervision of all institutions, whether public or private. With the "General Health Insurance" facility for those with financial difficulties or low income, it is aimed that no one will be left without service (anayasa.gen.tr/1982).

Patient Rights, which started to be studied in the 1970s in the USA, became official with the declaration of the Lisbon Declaration by the World Medical Association in 1981. After it was enacted in Finland in 1993, the Amsterdam and 1995 Lisbon Declarations took place in Europe in 1994 and in parallel with these developments, the "Patient Rights Regulation" was issued in 1998, and it found a response in our country. The principles governing this regulation are: the principle of respect for the right to a healthy life, the principle of protecting material and spiritual existence, the principle of treating patients equally, the principle of seeking the consent of the patient, the principle that the patient cannot be subjected to medical research without his consent, and the principles of privacy and confidentiality of private life (Aydın, 2008).

In the Patient Rights Regulation, there are all headings from the right to benefit from health services to obtaining information about the state of health, from performing the medical intervention with the consent of the patient to protecting the health of the patient in medical research (Aydın, 2008).

In short, the health sector in Turkey, in accordance with the developments in history, started from the benefit provided by the person, and has developed to the structure that provides services in the facilities called hospitals. In recent years, the activation and continuity of quality and control processes at all levels has been ensured by legally securing the rights of the service recipient.

The dimensions of the Human Development Index (HDI) include knowledge and decent living standards, as well as a long and healthy life criterion. This scale, which is accepted as an indicator of humane living, was proposed by Pakistani economist Mahbubu l Haq in 1990. It has been prepared as a report annually since 1993 by the United Nations, since it will show to what extent the country's economy affects the quality of life, as well as measuring the level of development of the country (wikipedia.org/wiki/İnsani_Gelişme_Endeksi).

In order to keep it out of date over the years, the index has left the calculation of average life expectancy and purchasing power in USD since 2010 and started calculating on the

basis of national income with life expectancy at birth and purchasing power prit. It is still calculated by taking the geometric average of the life expectancy index, education index and income index values after the regulation in 2010 (wikipedia.org/wiki/İnsani_Gelişme_Endeksi).

The Human Life Index value, which was 0.653 in 2000, reached 0.737 in 2010. Life expectancy has increased from 64.3 to 77.7 years, the expected education period has increased from 8.9 to 16.6 years, and the average education period has reached 0.82 in 2019, with an increase from 4.5 to 8.1 years.

With the G value per capita increasing from 12514 dollars to 27701 dollars, it ranked 54th among 182 countries in 2020, as stated in the United Nations 2020 Report. Considering that Turkey was ranked 85th among 174 countries in 2000, it is seen that the increase in the index is also reflected in the ranking (Bulut, Babacan and Ertekin, 2021).

There are economists who explain the reason for the limited effect of the increase in the numerical increase on the ranking among the countries with the increase in the number of countries measured and the negative effects of the fluctuations in the economy, as well as the authors who state that this explanation is insufficient, that human development cannot be measured by human welfare (Tıraş, 2019).

Ultimately, whether it is in the name of human welfare or human development, the health of women and children, which affects the life expectancy in both cases, and the quality and dimensions of service in the health sector affect the result. In addition, the values obtained in the index calculated as life expectancy or life expectancy in both types of calculations before and after 2010 show the importance of the development in the health sector and the improvement in the services provided, because the results obtained directly affect the index.

In this study, although the ranking of human development among countries has not been directly studied, the development issue in the Turkish Health Sector, which affects the ranking, in the period of 2000-2020 has been examined on a provincial basis. Gray Relational Analysis method, which is one of the Multi-Criteria Decision Making methods, was used for the analysis.

In the study, firstly, the basic health indicators obtained from the Turkish Statistical Institute (TUIK) database; The values of the total number of physicians per thousand people, the number of hospitals, the number of hospital beds, and the total number of hospital beds per hundred thousand people were used. These obtained values are weighted by the Entropy method. Then, the development in the Turkish Health Sector was evaluated between 2006 and 2019 and according to weighted criteria, since the components in the data in 2005 and before were different.

Entropy Method:

The entropy method was proposed by Rudolf Clausius in 1965 and has been widely used in applications in the fields of science and engineering. In fact, entropy, which is a measure of uncertainty, is used to detect useful information in the data stack (Wu and Sun, 2011). Fighting poverty (Chen, 2015), quality of life evaluation (Ömürbek, Eren et al., 2017), service quality evaluation in airline companies (Bakır and Atalık, 2018), personnel selection (Ulutaş, 2019), performance analysis of public banks (Ural, Demireli et al., 2017), measurement of R&D performance in EU countries (Çakır and Perçin, 2013), analysis of the performance of deposit banks (Ayçin and Orçun, 2019), and performance measurement of insurance companies (Perçin and Sonmez, 2018) is widely used in social sciences as well as in research.

There are five stages in these methods:

- The first stage decision matrix is normalized according to the benefit and cost indices,
- In the second stage, Pij is calculated with normalization, so problems arising from different measurements are solved,
- In the third step, the Ej value is calculated using normalized Pij values.
- In the fourth stage, DJ uncertainty is calculated,
- At the last stage, the application of the method is completed by calculating the wj weights as the importance degree of the j criterion (Wu and Sun, 2011).

Weighting of Criteria by Entropy Method

Basic Health Indicators for the years 2006 and 2019 (Total number of physicians per thousand people, Number of Hospitals, Number of Hospital beds, Total number of hospital beds per hundred thousand people) were weighted with the entropy method. The criteria weights obtained with the values of 2006 are as given in Table 1.

Table 1: Weighting of Basic Health Indicators for 2006

	Total number of physicians per thousand people	Number of Hospitals	Number of hospital beds	per hundred thousand people total number of hospital beds	Total
EJ	-0,030659297	-0,05380407	-0,065205296	-0,030773339	4,18044
DJ	1,030659297	1,05380407	1,065205296	1,030773339	
Wİ	0,24654314	0,252079581	0,254806859	0,24657042	1

The criteria weights obtained with the values for 2019 are as given in Table 2.

Table 2: Weighting of Basic Health Indicators for 2019

	Total number of physicians per thousand people	Number of Hospitals	Number of hospital beds	per hundred thousand people total number of hospital beds	Total
EJ	-0,03022	-0,05148	-0,0618	-0,02942	4,17297
DJ	1,030220	1,051486	1,06183	1,029425	
Wİ	0,246879	0,251975	0,25445	0,246689	1

Gray Relational Analysis Method:

Gray systems theory was proposed by Julong Deng in 1982 with the article "The Control Problems of Gray Systems" and is widely used as a multi-criteria decision making model. This method; determination of the optimum tool holder (Yılmaz and Güngör, 2010), optimum tire selection (Kökçam, Uygun et al., 2018), financial performance evaluation (Güleç and Özkan, 2018), examination of the financial status of tourism companies (Ecer and Günay, 2014), BIST' Evaluation of the financial performance of companies in the field of informatics and technology registered with the Internet (Tayyar, Akcanlı et al., 2014), selection of suppliers in the automotive sector (Özdemir and Deste, 2009), selection of the most suitable automobile (Şişman and Eleren, 2013), the highest net worth in Turkey It is used as an application in different subjects such as the financial performance of 20 companies with sales revenue (Günay, Karadeniz et al., 2018) and performance measurement of companies traded in the stock market (Bektaş and Tuna, 2013). The reason for its widespread use is that it can offer a solution for the decision with the available information even in cases where there is incomplete or uncertain information. The essence of this method is that it can be easily and practically adapted to any problem by symbolizing unknown information as black, partially known information as gray and known information as white (Kökçam, Uygun et al., 2018). In Table 3, the normalization process is indicated primarily in the method application.

Table 3: Evaluation of 2006 with Gray Relational Analysis Method

Normalization					Gray Relational				
Referans	1,00	1,00	1,00	1,00	Referans	1,00	1,00	1,00	1,00
Adana	0,00	0,11	0,17	0,42	Adana	0,00	0,11	0,17	0,42
Adıyaman	0,00	0,03	0,02	0,12	Adıyaman	0,00	0,03	0,02	0,12
Afyonkarahisar	0,00	0,10	0,07	0,51	Afyonkarahisar	0,00	0,10	0,07	0,51
Ağrı	0,00	0,05	0,02	0,12	Ağrı	0,00	0,05	0,02	0,12
Amasya	0,00	0,03	0,03	0,59	Amasya	0,00	0,03	0,03	0,59
Ankara	1,00	0,34	0,64	0,81	Ankara	1,00	0,34	0,64	0,81
Antalya	0,33	0,16	0,13	0,35	Antalya	0,33	0,16	0,13	0,35
Artvin	0,00	0,04	0,01	0,55	Artvin	0,00	0,04	0,01	0,55
Aydın	0,33	0,07	0,07	0,36	Aydın	0,33	0,07	0,07	0,36
Balıkesir	0,00	0,12	0,10	0,48	Balıkesir	0,00	0,12	0,10	0,48
Bilecik	0,00	0,02	0,01	0,17	Bilecik	0,00	0,02	0,01	0,17
Bingöl	0,00	0,02	0,02	0,37	Bingöl	0,00	0,02	0,02	0,37
Bitlis	0,00	0,04	0,01	0,20	Bitlis	0,00	0,04	0,01	0,20
Bolu	0,33	0,04	0,02	0,53	Bolu	0,33	0,04	0,02	0,53
Burdur	0,00	0,03	0,02	0,49	Burdur	0,00	0,03	0,02	0,49
Bursa	0,00	0,15	0,21	0,43	Bursa	0,00	0,15	0,21	0,43
Çanakkale	0,00	0,06	0,04	0,50	Çanakkale	0,00	0,06	0,04	0,50
Çankırı	0,00	0,04	0,01	0,36	Çankırı	0,00	0,04	0,01	0,36
Çorum	0,00	0,08	0,05	0,52	Çorum	0,00	0,08	0,05	0,52
Denizli	0,33	0,09	0,06	0,30	Denizli	0,33	0,09	0,06	0,30
Diyarbakır	0,00	0,08	0,11	0,39	Diyarbakır	0,00	0,08	0,11	0,39
Edirne	0,33	0,04	0,05	0,82	Edirne	0,33	0,04	0,05	0,82
Elazığ	0,33	0,06	0,09	1,00	Elazığ	0,33	0,06	0,09	1,00
Erzincan	0,00	0,05	0,02	0,68	Erzincan	0,00	0,05	0,02	0,68
Erzurum	0,33	0,06	0,11	0,76	Erzurum	0,33	0,06	0,11	0,76
Eskişehir	0,33	0,05	0,10	0,81	Eskişehir	0,33	0,05	0,10	0,81
Gaziantep	0,00	0,06	0,09	0,24	Gaziantep	0,00	0,06	0,09	0,24
Giresun	0,00	0,06	0,04	0,56	Giresun	0,00	0,06	0,04	0,56
Gümüşhane	0,00	0,02	0,01	0,42	Gümüşhane	0,00	0,02	0,01	0,42
Hakkari	0,00	0,02	0,01	0,13	Hakkari	0,00	0,02	0,01	0,13
Hatay	0,00	0,08	0,06	0,15	Hatay	0,00	0,08	0,06	0,15
Isparta	0,33	0,07	0,06	0,92	Isparta	0,33	0,07	0,06	0,92
Mersin	0,00	0,09	0,10	0,29	Mersin	0,00	0,09	0,10	0,29
İstanbul	0,33	1,00	1,00	0,39	İstanbul	0,33	1,00	1,00	0,39
İzmir	0,33	0,23	0,37	0,51	İzmir	0,33	0,23	0,37	0,51
Kars	0,00	0,02	0,01	0,24	Kars	0,00	0,02	0,01	0,24
Kastamonu	0,00	0,08	0,04	0,66	Kastamonu	0,00	0,08	0,04	0,66
Kayseri	0,00	0,09	0,09	0,40	Kayseri	0,00	0,09	0,09	0,40
Kırklareli	0,00	0,03	0,02	0,33	Kırklareli	0,00	0,03	0,02	0,33
Kırşehir	0,00	0,03	0,01	0,25	Kırşehir	0,00	0,03	0,01	0,25
Kocaeli	0,00	0,10	0,09	0,29	Kocaeli	0,00	0,10	0,09	0,29
Konya	0,00	0,17	0,15	0,37	Konya	0,00	0,17	0,15	0,37
Kütahya	0,00	0,05	0,05	0,45	Kütahya	0,00	0,05	0,05	0,45
Malatya	0,00	0,08	0,07	0,48	Malatya	0,00	0,08	0,07	0,48
Manisa	0,00	0,12	0,11	0,43	Manisa	0,00	0,12	0,11	0,43
Kahramanmaraş	0,00	0,06	0,05	0,18	Kahramanmaraş	0,00	0,06	0,05	0,18
Mardin	0,00	0,03	0,01	0,00	Mardin	0,00	0,03	0,01	0,00
Muğla	0,00	0,09	0,05	0,30	Muğla	0,00	0,09	0,05	0,30
Muş	0,00	0,03	0,02	0,20	Muş	0,00	0,03	0,02	0,20
Nevşehir	0,00	0,03	0,01	0,16	Nevşehir	0,00	0,03	0,01	0,16
Niğde	0,00	0,04	0,02	0,26	Niğde	0,00	0,04	0,02	0,26
Ordu	0,00	0,07	0,05	0,35	Ordu	0,00	0,07	0,05	0,35
Rize	0,00	0,03	0,02	0,45	Rize	0,00	0,03	0,02	0,45
Sakarya	0,00	0,07	0,04	0,21	Sakarya	0,00	0,07	0,04	0,21
Samsun	0,33	0,10	0,12	0,53	Samsun	0,33	0,10	0,12	0,53
Siirt	0,00	0,03	0,01	0,10	Siirt	0,00	0,03	0,01	0,10
Sinop	0,00	0,03	0,02	0,53	Sinop	0,00	0,03	0,02	0,53
Sivas	0,33	0,08	0,07	0,58	Sivas	0,33	0,08	0,07	0,58
Tekirdağ	0,00	0,07	0,06	0,40	Tekirdağ	0,00	0,07	0,06	0,40
Tokat	0,00	0,06	0,05	0,43	Tokat	0,00	0,06	0,05	0,43
Trabzon	0,33	0,07	0,09	0,68	Trabzon	0,33	0,07	0,09	0,68
Tunceli	0,00	0,00	0,00	0,15	Tunceli	0,00	0,00	0,00	0,15
Şanlıurfa	0,00	0,07	0,04	0,07	Şanlıurfa	0,00	0,07	0,04	0,07
Uşak	0,00	0,03	0,03	0,49	Uşak	0,00	0,03	0,03	0,49
Van	0,00	0,07	0,06	0,26	Van	0,00	0,07	0,06	0,26
Yozgat	0,00	0,06	0,03	0,27	Yozgat	0,00	0,06	0,03	0,27
Zonguldak	0,00	0,04	0,05	0,46	Zonguldak	0,00	0,04	0,05	0,46
Aksaray	0,00	0,05	0,02	0,24	Aksaray	0,00	0,05	0,02	0,24
Bayburt	0,00	0,00	0,00	0,29	Bayburt	0,00	0,00	0,00	0,29
Karaman	0,00	0,02	0,01	0,31	Karaman	0,00	0,02	0,01	0,31
Kırıkkale	0,33	0,02	0,03	0,57	Kırıkkale	0,33	0,02	0,03	0,57
Batman	0,00	0,04	0,01	0,07	Batman	0,00	0,04	0,01	0,07
Şırnak	0,00	0,03	0,01	0,01	Şırnak	0,00	0,03	0,01	0,01
Bartın	0,00	0,02	0,01	0,37	Bartın	0,00	0,02	0,01	0,37
Ardahan	0,00	0,02	0,01	0,40	Ardahan	0,00	0,02	0,01	0,40
Iğdır	0,00	0,02	0,01	0,18	Iğdır	0,00	0,02	0,01	0,18
Yalova	0,00	0,01	0,00	0,17	Yalova	0,00	0,01	0,00	0,17
Karabük	0,00	0,03	0,02	0,64	Karabük	0,00	0,03	0,02	0,64
Kilis	0,00	0,00	0,00	0,12	Kilis	0,00	0,00	0,00	0,12
Osmaniye	0,00	0,03	0,02	0,20	Osmaniye	0,00	0,03	0,02	0,20
Düzce	0,33	0,02	0,01	0,23	Düzce	0,33	0,02	0,01	0,23

The ranking on the basis of provinces in 2006 was realized as in the table below. Istanbul is in the first place. (Table 4)

Table 4: Ranking of Provinces for 2006 by Basic Health Criteria

il	k1	k2	k3	k4	Ortalama	Sıralama
İstanbul	0,1057	0,2521	0,2548	0,1108	0,1808	1
Ankara	0,2465	0,1088	0,1475	0,1783	0,1703	2
Elazığ	0,1057	0,0875	0,0904	0,2466	0,1325	3
Isparta	0,1057	0,0879	0,0888	0,2112	0,1234	4
Eskişehir	0,1057	0,0869	0,0911	0,1788	0,1156	5
Edirne	0,1057	0,0863	0,0882	0,1811	0,1153	6
Erzurum	0,1057	0,0875	0,0914	0,1671	0,1129	7
İzmir	0,1057	0,0993	0,1125	0,1247	0,1105	8
Trabzon	0,1057	0,0882	0,0903	0,1509	0,1088	9
Sivas	0,1057	0,0885	0,0889	0,1336	0,1042	10
Samsun	0,1057	0,0901	0,0925	0,1272	0,1039	11
Kırıkkale	0,1057	0,0852	0,0865	0,1333	0,1027	12
Erzincan	0,0822	0,0869	0,0863	0,1509	0,1016	13
Kastamonu	0,0822	0,0888	0,0873	0,1473	0,1014	14
Bolu	0,1057	0,0860	0,0863	0,1275	0,1014	15
Antalya	0,1057	0,0941	0,0929	0,1076	0,1001	16
Karabük	0,0822	0,0858	0,0862	0,1431	0,0993	17
Aydın	0,1057	0,0879	0,0890	0,1083	0,0977	18
Amasya	0,0822	0,0858	0,0869	0,1352	0,0975	19
Bursa	0,0822	0,0931	0,0985	0,1149	0,0972	20
Giresun	0,0822	0,0875	0,0873	0,1314	0,0971	21
Denizli	0,1057	0,0891	0,0883	0,1031	0,0965	22
Balıkesir	0,0822	0,0914	0,0912	0,1209	0,0964	23
Afyonkarahis	0,0822	0,0897	0,0889	0,1247	0,0964	24
Çorum	0,0822	0,0885	0,0880	0,1261	0,0962	25
Artvin	0,0822	0,0860	0,0857	0,1296	0,0959	26
Adana	0,0822	0,0904	0,0956	0,1140	0,0955	27
Sinop	0,0822	0,0855	0,0859	0,1275	0,0953	28
Malatya	0,0822	0,0885	0,0888	0,1214	0,0952	29
Konya	0,0822	0,0948	0,0943	0,1091	0,0951	30
Manisa	0,0822	0,0910	0,0918	0,1152	0,0950	31
Çanakkale	0,0822	0,0875	0,0874	0,1230	0,0950	32
Uşak	0,0822	0,0858	0,0866	0,1219	0,0941	33
Burdur	0,0822	0,0855	0,0861	0,1222	0,0940	34
Zonguldak	0,0822	0,0863	0,0881	0,1183	0,0937	35
Kütahya	0,0822	0,0866	0,0879	0,1178	0,0936	36
Kayseri	0,0822	0,0894	0,0905	0,1124	0,0936	37
Düzce	0,1057	0,0849	0,0858	0,0970	0,0933	38
Diyarbakır	0,0822	0,0885	0,0918	0,1106	0,0933	39
Tokat	0,0822	0,0875	0,0879	0,1147	0,0931	40

il	k1	k2	k3	k4	Ortalama	Sıralama
Rize	0,0822	0,0855	0,0864	0,1173	0,0928	41
Tekirdağ	0,0822	0,0882	0,0882	0,1122	0,0927	42
Gümüşhane	0,0822	0,0852	0,0854	0,1140	0,0917	43
Kocaeli	0,0822	0,0901	0,0904	0,1021	0,0912	44
Ordu	0,0822	0,0879	0,0879	0,1068	0,0912	45
Ardahan	0,0822	0,0849	0,0853	0,1122	0,0911	46
Mersin	0,0822	0,0891	0,0911	0,1020	0,0911	47
Bingöl	0,0822	0,0849	0,0859	0,1095	0,0906	48
Çankırı	0,0822	0,0860	0,0855	0,1085	0,0905	49
Muğla	0,0822	0,0891	0,0877	0,1031	0,0905	50
Bartın	0,0822	0,0849	0,0855	0,1091	0,0904	51
Kırklareli	0,0822	0,0858	0,0861	0,1054	0,0899	52
Gaziantep	0,0822	0,0875	0,0901	0,0982	0,0895	53
Van	0,0822	0,0879	0,0882	0,0991	0,0893	54
Karaman	0,0822	0,0849	0,0856	0,1038	0,0891	55
Yozgat	0,0822	0,0872	0,0865	0,1001	0,0890	56
Sakarya	0,0822	0,0882	0,0873	0,0957	0,0883	57
Bayburt	0,0822	0,0840	0,0850	0,1020	0,0883	58
Niğde	0,0822	0,0860	0,0859	0,0991	0,0883	59
Aksaray	0,0822	0,0869	0,0859	0,0975	0,0881	60
Kırşehir	0,0822	0,0855	0,0855	0,0989	0,0880	61
Kars	0,0822	0,0852	0,0858	0,0979	0,0877	62
Hatay	0,0822	0,0888	0,0884	0,0916	0,0877	63
Kahramanmı	0,0822	0,0872	0,0876	0,0936	0,0877	64
Bitlis	0,0822	0,0863	0,0857	0,0952	0,0874	65
Osmaniye	0,0822	0,0858	0,0861	0,0945	0,0871	66
Muş	0,0822	0,0855	0,0859	0,0947	0,0871	67
Iğdır	0,0822	0,0849	0,0852	0,0936	0,0865	68
Nevşehir	0,0822	0,0855	0,0855	0,0919	0,0863	69
Bilecik	0,0822	0,0849	0,0853	0,0925	0,0862	70
Yalova	0,0822	0,0843	0,0852	0,0928	0,0861	71
Ağrı	0,0822	0,0866	0,0859	0,0893	0,0860	72
Şanlıurfa	0,0822	0,0879	0,0875	0,0861	0,0859	73
Adıyaman	0,0822	0,0858	0,0861	0,0893	0,0858	74
Hakkari	0,0822	0,0849	0,0853	0,0900	0,0856	75
Tunceli	0,0822	0,0840	0,0849	0,0912	0,0856	76
Siirt	0,0822	0,0855	0,0853	0,0879	0,0852	77
Kilis	0,0822	0,0840	0,0850	0,0891	0,0851	78
Batman	0,0822	0,0860	0,0856	0,0860	0,0849	79
Şırnak	0,0822	0,0855	0,0853	0,0829	0,0840	80
Mardin	0,0822	0,0855	0,0856	0,0822	0,0839	81

When we examine the ranking results, Ankara comes right after Istanbul. It is seen that these two provinces are ranked with very close values. If we evaluate this situation together with the details of Turkey's two largest provinces and the clustering of investments and educated manpower, it can be stated that the result is as expected. Although the provinces of Elazığ, Isparta and Eskişehir, which follow immediately, are ranked with values close

to each other, it should be noted that Ankara province is 28.5% larger than Elazığ and there is a significant difference between them. In addition, Batman, Şırnak and Mardin are in the last three places in the ranking.

Evaluation of 2019 with Gray Relational Analysis Method

In 2019, the ranking on the basis of provinces was realized as in the table below. It is seen that Istanbul, which is in the first place, maintains its place. (Table 5)

Table 5: Ranking of Provinces for 2019 by Basic Health Criteria

il	k1	k2	k3	k4	Ortalam	Sıralama
İstanbul	0,1234	0,2520	0,2545	0,1091	0,1847	1
Edirne	0,2469	0,0865	0,0874	0,2062	0,1567	2
Isparta	0,2469	0,0875	0,0875	0,1944	0,1541	3
Ankara	0,2469	0,1096	0,1239	0,1339	0,1536	4
İzmir	0,2469	0,1010	0,1059	0,1138	0,1419	5
Elazığ	0,1234	0,0865	0,0890	0,2467	0,1364	6
Erzurum	0,1234	0,0896	0,0900	0,2126	0,1289	7
Bolu	0,1234	0,0865	0,0867	0,2010	0,1244	8
Kınkkale	0,1234	0,0855	0,0864	0,1861	0,1203	9
Sivas	0,1234	0,0888	0,0884	0,1660	0,1167	10
Trabzon	0,1234	0,0891	0,0894	0,1599	0,1154	11
Eskişehir	0,1234	0,0875	0,0898	0,1568	0,1144	12
Samsun	0,1234	0,0904	0,0921	0,1431	0,1123	13
Konya	0,1234	0,0960	0,0967	0,1328	0,1122	14
Zonguldak	0,1234	0,0867	0,0879	0,1485	0,1116	15
Malatya	0,1234	0,0883	0,0889	0,1444	0,1113	16
Tokat	0,1234	0,0875	0,0879	0,1436	0,1106	17
Adana	0,1234	0,0921	0,0958	0,1255	0,1092	18
Giresun	0,1234	0,0880	0,0869	0,1370	0,1088	19
Manisa	0,1234	0,0913	0,0917	0,1285	0,1087	20
Antalya	0,1234	0,0967	0,0963	0,1177	0,1085	21
Kayseri	0,1234	0,0907	0,0915	0,1275	0,1083	22
Denizli	0,1234	0,0896	0,0894	0,1235	0,1065	23
Bursa	0,1234	0,0951	0,0975	0,1096	0,1064	24
Rize	0,1234	0,0865	0,0862	0,1281	0,1061	25
Çorum	0,1234	0,0877	0,0870	0,1232	0,1053	26
Çanakkale	0,1234	0,0872	0,0870	0,1229	0,1051	27
Afyonkarahi	0,1234	0,0893	0,0878	0,1195	0,1050	28
Yozgat	0,1234	0,0877	0,0864	0,1210	0,1047	29
Aydın	0,1234	0,0899	0,0892	0,1152	0,1044	30
Diyarbakır	0,1234	0,0907	0,0918	0,1114	0,1043	31
Balıkesir	0,1234	0,0902	0,0895	0,1114	0,1036	32
Mersin	0,1234	0,0907	0,0918	0,1084	0,1036	33
Kocaeli	0,1234	0,0910	0,0914	0,1023	0,1021	34
Kahramanm	0,1234	0,0883	0,0889	0,1074	0,1020	35
Karabük	0,1234	0,0852	0,0856	0,1132	0,1019	36
Kars	0,1234	0,0857	0,0857	0,1086	0,1009	37
Muğla	0,1234	0,0891	0,0876	0,0975	0,0994	38
Erzincan	0,1234	0,0862	0,0854	0,1017	0,0992	39
Yalova	0,1234	0,0855	0,0855	0,1015	0,0990	40

il	k1	k2	k3	k4	Ortalam	Sıralama
Kilis	0,1234	0,0842	0,0851	0,1006	0,0983	41
Sakarya	0,1234	0,0885	0,0874	0,0933	0,0982	42
Ardahan	0,1234	0,0845	0,0849	0,0987	0,0979	43
Düzce	0,1234	0,0857	0,0857	0,0959	0,0977	44
Artvin	0,1234	0,0857	0,0851	0,0959	0,0975	45
Gaziantep	0,0823	0,0918	0,0943	0,1204	0,0972	46
Tunceli	0,1234	0,0852	0,0848	0,0914	0,0962	47
Uşak	0,0823	0,0857	0,0864	0,1302	0,0961	48
Kütahya	0,0823	0,0870	0,0873	0,1278	0,0961	49
Ordu	0,0823	0,0880	0,0878	0,1183	0,0941	50
Kastamonu	0,0823	0,0883	0,0861	0,1157	0,0931	51
Hatay	0,0823	0,0902	0,0909	0,1081	0,0929	52
Bitlis	0,0823	0,0857	0,0860	0,1149	0,0922	53
Van	0,0823	0,0872	0,0890	0,1101	0,0922	54
Tekirdağ	0,0823	0,0885	0,0886	0,1086	0,0920	55
Burdur	0,0823	0,0860	0,0857	0,1138	0,0919	56
Sinop	0,0823	0,0855	0,0854	0,1106	0,0909	57
Siirt	0,0823	0,0860	0,0858	0,1086	0,0907	58
Kırklareli	0,0823	0,0862	0,0859	0,1067	0,0903	59
Bingöl	0,0823	0,0857	0,0856	0,1067	0,0901	60
Amasya	0,0823	0,0855	0,0858	0,1055	0,0898	61
Niğde	0,0823	0,0857	0,0859	0,1050	0,0897	62
Osmaniye	0,0823	0,0862	0,0864	0,1039	0,0897	63
Çankırı	0,0823	0,0860	0,0853	0,1034	0,0892	64
Karaman	0,0823	0,0855	0,0854	0,1030	0,0890	65
Nevşehir	0,0823	0,0862	0,0856	0,1017	0,0889	66
Şanlıurfa	0,0823	0,0885	0,0905	0,0941	0,0889	67
Batman	0,0823	0,0867	0,0865	0,0991	0,0887	68
Adıyaman	0,0823	0,0867	0,0865	0,0987	0,0886	69
Bayburt	0,0823	0,0840	0,0849	0,1030	0,0885	70
Bartın	0,0823	0,0845	0,0852	0,0991	0,0878	71
Aksaray	0,0823	0,0862	0,0858	0,0956	0,0875	72
Gümüşhane	0,0823	0,0852	0,0851	0,0954	0,0870	73
Kırşehir	0,0823	0,0850	0,0853	0,0944	0,0867	74
Muş	0,0823	0,0855	0,0857	0,0933	0,0867	75
Mardin	0,0823	0,0867	0,0867	0,0905	0,0865	76
Ağrı	0,0823	0,0862	0,0858	0,0891	0,0859	77
Bilecik	0,0823	0,0857	0,0851	0,0873	0,0851	78
Iğdır	0,0823	0,0847	0,0850	0,0880	0,0850	79
Hakkari	0,0823	0,0847	0,0852	0,0862	0,0846	80
Şırnak	0,0823	0,0855	0,0855	0,0822	0,0839	81

While the provinces of Edirne, which is in the second place, Isparta, which is in the third place, and Ankara, which is in the fourth place, have very close values to each other, there is a 8.2% difference between them and İzmir, which is the fifth runner-up. The last three places are Iğdır, Hakkari and Şırnak.

Comparison of 2006-2019 Rankings

The comparison of the ranking obtained for the year 2006 with the ranking obtained for the year 2019 and the arranged table of developments or regressions in the ranking are below. (Table 6)

Table 6: Comparison of 2006-2019 Rankings

Pozitif Gelişme				Negatif Gelişme			
İl	2006	2019	Değişim	İl	2006	2019	Değişim
Kilis	78	41	37	Denizli	22	23	-1
Yalova	71	40	31	Çorum	25	26	-1
Kahramanmaraş	64	35	29	Şırnak	80	81	-1
Tunceli	76	47	29	Ankara	2	4	-2
Yozgat	56	29	27	Trabzon	9	11	-2
Kars	62	37	25	Samsun	11	13	-2
Tokat	40	17	23	Elazığ	3	6	-3
Zonguldak	35	15	20	Niğde	59	62	-3
Siirt	77	58	19	Bursa	20	24	-4
Konya	30	14	16	Afyonkarahisar	24	28	-4
Rize	41	25	16	Antalya	16	21	-5
Kayseri	37	22	15	Ordu	45	50	-5
Sakarya	57	42	15	Ağrı	72	77	-5
Mersin	47	33	14	Hakkari	75	80	-5
Malatya	29	16	13	Düzce	38	44	-6
Muğla	50	38	12	Eskişehir	5	12	-7
Bitlis	65	53	12	Kırklareli	52	59	-7
Manisa	31	20	11	Muş	67	75	-8
Hatay	63	52	11	Bilecik	70	78	-8
Batman	79	68	11	Balıkesir	23	32	-9
Kocaeli	44	34	10	Karaman	55	65	-10
Adana	27	18	9	Iğdır	68	79	-11
Diyarbakır	39	31	8	Aydın	18	30	-12
Bolu	15	8	7	Bingöl	48	60	-12
Gaziantep	53	46	7	Bayburt	58	70	-12
Şanlıurfa	73	67	6	Aksaray	60	72	-12
Çanakkale	32	27	5	Kütahya	36	49	-13
Adıyaman	74	69	5	Tekirdağ	42	55	-13
Mardin	81	76	5	Kırşehir	61	74	-13
Edirne	6	2	4	Uşak	33	48	-15
İzmir	8	5	3	Çankırı	49	64	-15
Kırıkkale	12	9	3	Karabük	17	36	-19
Ardahan	46	43	3	Artvin	26	45	-19
Osmaniye	66	63	3	Bartın	51	71	-20
Nevşehir	69	66	3	Burdur	34	56	-22
Giresun	21	19	2	Erzincan	13	39	-26
Isparta	4	3	1	Sinop	28	57	-29
				Gümüşhane	43	73	-30
				Kastamonu	14	51	-37
				Amasya	19	61	-42

The highest progress in the ranking was realized in Kilis (37 rows up), Yalova (31 rows up), Kahramanmaraş and Tunceli (29 rows up), respectively. It was observed that the first six provinces with the highest positive development were not among the first 50 provinces in the 2006 ranking.

The provinces that regressed the most in the ranking are in the Black Sea Region. These provinces are Amasya (42 rows behind), Kastamonu (37 rows behind), Gümüşhane (30 rows behind), Sinop (29 rows behind), respectively. It has been observed that these provinces are among the first 30 provinces in the 2006 ranking, excluding Gümüşhane (43) provinces.

Although not shown in the positive development and negative development table, there are four provinces whose order has not changed. It can be said that Istanbul, which is among these provinces, has put forward a very successful performance as it is in the first place by preserving both its order and weight value. Again, it should be noted that Erzurum, which held its seventh place between 2006 and 2019, and Sivas, which maintained its tenth place, were also successful, although they were not clearly included in the results table, because they were among the top ten in both years. When the findings are evaluated, the Human Development Index calculates the welfare and development level of the countries according to the criteria and ranks the countries, and in a sense gives homework to the countries to live in a decent way. For this purpose, it not only records the years lived, but also provides projections for the future, enabling countries to focus their attention on deficiencies. As a matter of fact, the fact that projections until 2025 were presented in the report published in 2010 shows this (Şeker, 2011, p.22).

Working using the same projection, the Ministry of Development works with its own national policies and sets national projections by setting further targets. The projections of the Ministry include more advanced targets than the United Nations projections (Şeker, 2011, p.22). According to the ranking obtained in 2020, Turkey's 54th place, advancing five places compared to the previous year, is a result of this. Under the heading of health policy and practices, which is one of the factors that increase the "average life expectancy" criterion in this index and taken from TUIK data (basic health indicators; Total number of physicians per thousand people, Number of hospitals, Number of hospital beds, Per hundred thousand people) Ranking was made between provinces using entropy and gray relational analysis using values (total number of hospital beds). It is important to create an infrastructure in order to prepare better projections by increasing the actions and practices carried out in provinces with positive results and giving positive results, by abandoning or improving the applications made in provinces with negative development and giving negative results.

It will not be the final numerical goal of this study, as it will come first and last in each ranking. As underlined in the quality standards and patient safety issues, better health care and better living conditions will be provided at the end of the continuous learning and improvement process. This will ultimately pave the way for our country to move up its current 54th place in the Human Development Index.

CONCLUSION

Many indicators and approaches are used to show the development performance of countries. For example, we can show GSYİH, per capita national income or purchasing power parity, welfare level, cross-country comparative indicators approach, sectoral distribution of employment approach, quality of life index and human development index as examples. While some of them are purely economic, the scope of others is broad. The last two examples are among the most widely used. We have to find our last two examples more meaningful than the others, as it will not be sufficient to measure the development of countries only with monetary assets. As a matter of fact, when we look at the content of the quality of life index developed by Morris D. Morris, it will be seen that two of the 3 basic criteria (life expectancy, infant mortality rate, literacy rate) are directly related to health.

In the human development index, the scope is slightly wider, and these are; In this study, it was aimed to measure the development performance of the countries based on the per capita income, life expectancy and education parameters according to the purchasing power parity. Here again, since the life expectancy variable is directly related to health, it is understood that health is indispensable as one of the most comprehensive indicators.

With this aspect, the area of interest of this study gains a strategic dimension. It is understood that health is one of the priority areas in order to gain superiority and competitive advantage in comparisons between countries.

Apart from the stated strategic dimension of this study, there were different findings.

1- The success achieved on a country basis in a certain period is to achieve a level that will provide superiority to many countries.

2- In order to carry this success to higher levels, it is possible to make a significant contribution to the current success by transforming the negative indicators on the basis of provinces into positive ones by developing appropriate policies.

3- It is the fact that the health parameter is a variable with the greatest effect and coefficient power in all related indices.

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Chapter 20

AN INTERTEXTUAL APPROACH TO FEAR IN FRANZ KAFKA'S STORY *THE BURROW* AND OĞUZ ATAY'S STORY *KORKUYU BEKLERKEN*

AN INTERTEXTUAL APPROACH TO FEAR IN FRANZ KAFKA'S STORY *THE BURROW* AND OĞUZ ATAY'S STORY *KORKUYU BEKLERKEN*

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I am here my dear reader, where are you?
Oğuz Atay

INTRODUCTION

In this study, we will try to read and make sense of Franz Kafka's (1883-1924) story *The Burrow* and Oğuz Atay's (1934-1977) story *Korkuyu Beklerken* within the framework of the theme fear with intertextual relations. Franz Kafka, who has influenced many writers in world literature, and Oğuz Atay, one of the prominent authors of Turkish literature, will be discussed in the context of intertextuality. In Oğuz Atay's story *Korkuyu Beklerken*, which seems to have entered the strong attraction of the Kafkaesque narrative style, we find the traces of Kafka's story called *The Burrow*. Our aim is to trace the common, similar and differentiating aspects of the two stories with intertextual relations, especially with a fear-focused perspective; the universal fear of animals/humans in the two stories.

Today, approaches within the framework of intertextual relations on literary texts have started to become widespread. First of all, "(…) whether contemporary, old or classical texts are in question, intertextuality is an invariable feature specific to every writing practice, that no text can be written independently of other previously written texts, and that every text, explicitly or implicitly, differs from previously written texts. We should state that every text bear trace and reminds us of previous texts" (Aktulum, 1999, p.19). Intertextual relations do not always show a parallel structure between two works. "It can develop in a structure that includes selection and extraction, opposition or literary transformation according to the understanding, taste and needs of the modern period. Because tradition can open up a wide field of experience in front of the contemporary artist, and it can also create an area of influence at any work level" (Gariper, 2002, pp.61-72). Sometimes, the artist/the writer may choose to establish an open conscious or hidden intertextuality with a work that came into existence before her/him.

Oğuz Atay, as many researchers have pointed out (Ecevit, 2009, p. 476), is one of the prominent representatives of the Kafkaesque narrative in Turkish literature. He benefited

from Kafka's works in creating fictional worlds, and built a network of intertextual relations with them. In this context, it is possible to treat of intertextuality between his story *Korkuyu Beklerken* and Kafka's story *The Burrow*. As a matter of fact, in his diary, while describing the human being integrated with fear, he refers to Kafka's story: "Like Kafka's subterranean animal, he awaits the unknown enemy in a tunnel dug towards him in fear. Perhaps this is our 'original sin': the fear of closed-system creatures of the outside world. It is the fear of living" (Atay, 1992, p. 94). These sentences of his are a reference for the network of intertextual relations that we can establish between the two stories.

Oğuz Atay is one of the modernist writers of Turkish literature. He is considered as one of the pioneers of the postmodern movement in Turkish literature, with the expansions he brought to the Turkish novel and the story. In the second half of the 20th century, he became one of the artists who successfully applied existentialism, which had a great influence in Europe, especially in France, in the field of novels and stories.

With the modernist novel movement developing in the world, the existentialist literary movement with a philosophical content, which became increasingly stronger after the World War II, was born from the war's overturning of all values and developed around the ideas that existence has no certain essence and that human beings do not have a given nature (Güçlü & Uzun & Uzun & Yolsal 2002, p.1521). The movement, which is traced back to Socrates, Stoics and St. Augustine in terms of source, has been divided into two as religion-oriented existentialism and atheistic existentialism in the modern period and was developed by philosophers and writers such as Søren Kierkegaard, Martin Heidegger, Friedrich Hölderlin, Jean Paul Sartre, Karl Jaspers, Franz Kafka, Albert Camus, Friedrich Wilhelm Nietzsche, Paul Claudel, Paul Valéry etc. This philosophical movement, which developed in different branches, went on the path of reconsidering the meaning of man on earth; "individual liberation", "freedom of choice", "fear" "nothingness", "unconsciousness", "anxiety", "absurd", "pessimism", "skepticism", "despair", "depression" etc. focused on the issues. This causes the products of existential literature in an important way to be pessimistic and negative.

According to the existentialist thought, "the human being, which presents himself as a problem, can take on an atheistic form by claiming that he created himself in complete freedom and assuming the function of God" (Hartmann, 2003, p. 179). For the godless man, this world is a troubled, gloomy and meaningless place. Just as human existence has no meaning, other entities that humans come into contact with have no meaning either. A person who finds himself so thrown into this world does not feel safe here, he worries and even fears.

The common features of modernist writers are that they do not approach the progress of social life, interpersonal relations, and the outside world as the realist novelists of the nineteenth century did; on the contrary, they are inclined to the inner world of the human, to the complex conscious and subconscious structure. Accordingly, the structure

of the classical novel leaves its place to an understanding that tries to get rid of the plot and is based on the characteristics of the inner world and consciousness such as symbols, rhythm and point of view (Moran, 1998, p. 198).

In addition to the features of the modernist story and novel, Oğuz Atay's stories and novels are predominantly *Kafkaesque.* Yıldız Ecevit defines the word *Kafkaesque* as a combination of meanings such as "fear/ insecurity/ alienation/ despair/ despair/ loneliness/ meaninglessness/ miscommunication/ terror/ crime/ punishment/ judgment" and states that Oğuz Atay's works are fed by the images of Kafka's fictional world (Ecevit, 2009, p.476).

The story named *The Burrow* (Ger. *Der Bau*), written by Franz Kafka between 1923-1924 and published posthumously in 1931, is about the life of an underground animal in a labyrinth house built. A threat anxiety and fear that can be directed to the subject around the phenomenon of existence shapes the story. The Burrow, besides its primary meaning, is full of images and references outside the work. The meaning of existence as a whole is questioned in the modernist story and novel in which the human-animal distinction is removed. Based on the narrator of this story, comments were made about Kafka's psychological world. The physical and mental disorders of the animal, which is the hero of the story, have been tried to be interpreted with the author (Weigand, 1972, pp. 152-166). According to Esra Kara, "many researchers attribute this to Kafka's personality and biography" (Kara, 2012, pp.170). However, Kafka's story should be interpreted metaphorically rather than its literal meaning and its author's biographical context.

Researchers say that the animal that finished the construction of its burrow in the story in question is a mole, badger, even a hamster, or another animal with features from these animals (Politzer,1962; Fingerhut, 1969; Henel, 1971; Boulby, 1982). However, the identity of the animal remains unclear there are some hints in the text. This animal has a beard, lives underground, digs the ground. Its defining feature is that it lives underground. The animal, who says that it did not build its burrow because of fear (Kafka, 1976, p. 325), creates long labyrinths in this underground shelter, and sets up various traps against its enemies. In fact, only it knows every part of its home. For the animal, the inner room in the center of its home, which it calls "the Castle Keep", is the place where it lives in real peace. However, there is a possibility that an unknown enemy may slowly dig a way towards it. This possibility makes it uneasy.

Expressing that it is old, not as strong as others and has countless enemies, the animal wishes to live a quiet life in peace in its home. But this silence is deceptive. According to it, "Anything might happen!" (Kafka, 1976, p. 326). For the animal that loves its home and lives here in a certain comfort, its home is not just a shelter. This is a universe where it exists, and comes into being with its own preferences. The story person who identifies itself with its home eventually makes it a part of its being. Any threat that may come to its burrow is a threat to its existence.

The hero of the story, who exhibits instinctive features peculiar to animals speaks as this:

> I do not know whether it is a habit that still persists from former days, or whether the perils even of this house of mine are great enough to awaken me; but invariably every now and then I start up out of profound sleep and listen, listen into the stillness which reigns here unchanged day and night, smile contentedly, and then sink with loosened limbs into still profounder sleep. Poor homeless wanderers in the roads and woods, creeping for warmth into a heap of leaves or a herd of their comrades, delivered to all the perils of heaven and earth! I lie here in a room secured on every side -there are more than fifty such rooms in my burrow-and pass as much of my time as I choose between dozing and unconscious sleep. (Kafka, 1976, p. 327)

These words show the difference between the life underground and the life above the ground. Its burrow consists of dense design rather than craftsmanship. The animal, which displays an obsessive image about the construction and order of its burrow, has no concept of time. For it, space is everything. The existence of the animal depends on the existence and security of its living space. For this reason, it is glad even to have blood coming from its forehead, where it hits the wall. Because this means that the walls are hardened and its burrow is solid. The inner part of the burrow, which the animal calls the Castle Keep, is also a storeroom, but as a result of its fear and anxiety attacks, it sometimes suddenly wakes up from sleep and thinks about needs to change the current order of the burrow. Each new plan the animal establishes requires a lot of work. The animal that decides to organize its rooms re-examines the burrow and punishes itself by staying away from its home for a long time. In fact, this animal starts from a half-playing corner to build the rooms, then becomes very happy and gets satisfied with this labyrinthine home which seems as the crown of all burrows to it (Kafka, 1976, p. 331).

The hero of the story carries the physical and spiritual tortures of the labyrinth with itself wherever it goes. Sometimes it gets very angry and crazy and gets lost in its own maze. The labyrinth evokes confusion. This confusion is more spiritual than physical. From time to time, it watches the entrance of its home for whole days and nights. With being far from the center of its home that is the safest place, the animal punishes itself. This situation that contains although dangerous, gives it infinite pleasure and confidence (Kafka, 1976, p. 334). Based on its observations it says “Here enemies are numerous and their allies and accomplices still more numerous, but they fight one another, and while thus employed rush past my burrow without noticing it.” (Kafka, 1976, p. 334) and runs away as soon as it senses the smell of strangers from afar. In fact, its home protects it more than it thinks. The attempt to escape brings about its alienation from beings outside itself. Questioning its existence by comparing the inside and outside of its burrow, the animal takes the necessary precautions for its home, but it cannot help going out from time to time. The animal analyzing the danger it faces says:

> And the danger is by no means a fanciful one, but very real. It need not be any particular enemy that is provoked to pursue me, it may very well be some chance

> innocent little creature, some disgusting little beast which follows me out of curiosity, and thus, without knowing it, becomes the leader of all the world against me. (Kafka, 1976, p. 337)

The hero of the story has no one. It lives alone. The reason for this loneliness is that it cannot trust anyone. It has built a home for itself, not for visitors. For this reason, it has to do the job of spying against its enemies at the entrance covered with moss. The animal can only trust itself and its burrow (Kafka, 1976, p. 338). The animal, who dreams of the perfect burrow, says that the burrow should not be regarded as "a mere hole into which one can creep and be safe" (Kafka, 1976, p. 339). It finds this unfair. For the animal, its home is not just a home, but a castle. Still, it cannot understand the source of the fear of uncertain cause that makes it hesitating. In case of not being able to see its burrow, the possibility of the enemy entering its burrow scares it even more. The memory of the animal, which was happy to wait passively in its home, gets very confused. It is an endless gain of time for it to reach the Castle Keep. The animal welcomes ventilation ducts dug by small creatures. But one day a noise is enough to make the animal nervous. In order for it to be peaceful, the corridors of the burrow must be quiet. This non-continuous noise is actually innocent. But the unknown source is disturbing. "[in] effect it makes no difference whether the noise comes from the external world of the 'earth' or the internal world of the burrower's psyche, since it is not so much the noise itself as what is made of it that matters" (Koelb, 2003, p.353). The resulting noise gives a new meaning to the animal, and surrounds it and its universe; the burrow. This noise paves the way for the potential fear lurking in its inner world to emerge. This noise that comes in a thin note becomes "a faint whistling, audible only at long intervals" (Kafka, 1976, p. 348-349). The animal sometimes thinks that no one else hears this noise. Because of the uneasiness caused by the noise, the peaceful universe of the animal turns into a fear universe. The noise of the little creatures' digging and their daring to reach inside drives the animal crazy. Anorexia (Sarı, 2009, p.49-51), which is frequently encountered in Kafka's works, is also encountered in this story. The animal, which thinks to destroy its enemies by risking to die of hunger, says that it may not know its enemy either. The storyteller, who says "it cannot be a single animal" (Kafka, 1976, p.347), digs a hole in the hope of catching them, but cannot find even one. The whole order and balance of the animal is disturbed by this unknown noise. With this restlessness and fear, it begins to destroy the walls of its home. Desiring to learn the truth, the animal questions its situation:

> All that I have done till now seems to me far too hasty; in the excitement of my return, while I had not yet shaken myself free from the cares of the upper world, and was not yet completely penetrated by the peace of the burrow, but rather hypersensitive at having had to renounce it for such a long time, I was thrown into complete confusion of mind by an unfamiliar noise. And what was it? A faint whistling, audible only at long intervals (…). (Kafka, 1976, p. 348-349)

The hero of the story thinks that if its logic does not prevent him, it will do nothing after it starts digging stubbornly and defiantly. In fact, digging is a natural thing for it. It decides

to repair the damage it has done to the burrow first. For the hero who is considering digging a new hole, this means leaving the burrow and surrendering to an uncertain fate (Kafka, 1976, p.350). Having endless discoveries, the animal no longer listens to the noise, it jumps into the air. Life is exalted for it. "(…) It is as if the fountains from which flows the silence of the burrow were unsealed." (Kafka, 1976, p. 350)

Commenting on its luck, the animal considers carefully examining its burrow and drawing up any possible defense plans. It expresses that it is in a hurry without surrendering and that it does not know what it wants. The noise it heard only magnifies the fear that was present in it. The narrator begins to understand that the enemy it is facing is much bigger and more dangerous than imagined. When the narrator of the burrow imagines the animal, which is its enemy, it feels like a dwarf. This noise, the harbinger of danger, completely turns everything in the burrow. But the excitement of danger seems to make its life worth living as much as it arises from the need for security (Weigand, 1972, p.156). The narrator expresses this situation as follow:

> A complete reversal of things in the burrow; what was once the place of danger has become a place of tranquility, while the Castle Keep has been plunged into the melee of the world and all its perils. Still worse even here there is no peace in reality, here nothing has changed; silent or vociferous, danger lies in ambush as before above the moss, but I have grown insensitive to it, my mind is far too much taken up with the whistling in my walls. Is my mind really taken up with it? It grows louder, it comes nearer (…). (Kafka, 1976, p. 352-353)

Developing thoughts on the noise, the animal eventually believes that this noise comes from a single big animal rather than a great number of little animals. This animal "works so furiously; it burrows as fast through the ground as another can walk on the open road" (Kafka, 1976, p.353-354). In fact, even when the digging stops, "the ground still trembles at its burrowing when it has ceased" (Kafka, 1976, p. 354). The noise made when it digs or scratches the ground in its own way is different from the digging noise an animal makes. The animal explains the digging work with these sentences:

> the beast's chief means of burrowing is not its claws, which it probably employs merely as a secondary resource, but its snout or its muzzle, which of course, apart from this enormous strength, must also be fairly sharp at the point. (Kafka, 1976, p. 354)

and says that he has never seen such a determined opponent. The narrator here is not only fearful of the animal, but also encourages the reader to consider the many sexual allusions (Snyder, 1981, p.118).

> Emphasizing the dialectic of fear, the animal tries to explain its fear:
>
> But apart altogether from the beast's peculiar characteristics, what is happening now is only something which I should really have feared all the time, something

> against which I should have been constantly prepared: the fact that someone would come. By what chance can everything have flowed on so quietly and happily for such a long time? Who can have diverted my enemies from their path, and forced them to make a wide detour around my property? Why have I been spared for so long, only to be delivered to such terrors now? (Kafka, 1976, p. 354-355).

Any damage to its burrow injures the animal as if it had damaged itself. The animal, which is integrated with its home on the plane of existence, feels guilty about it. Its home is where it locates its own existence. Instead of defending itself, it thinks why it had not defended its home. In fact, there have always been danger signs. The digger has come before, but the animal ignored it before. The hero of the story, who describes itself as an "old architect" (Kafka, 1976, p. 357), says that minor worries gnaw at the listener. Thinking that it should make the most of its food as the last plan, the animal cannot tell whether its enemy is wandering or is building its own burrow. It thinks it can make a deal with the animal if it wanders around. According to the animal, this agreement will be in the form of giving half of its food if it enters its burrow. According to its dream, the unknown enemy will thus go its own way. Desperate, the animal, who develops thoughts such as it could even dream of understanding the animal, although knows very well that such a thing cannot happen, understands that they cannot tolerate each other if they dig their own burrow. The hero of the story, who says that it is silent in any case, thinks that perhaps its enemy may have heard it. However, nothing has changed the uncertain enemy continues to dig. Noise and noise-related fear persist until the end of the story.

At the center of all fictionalized worlds are human beings and human states. Oğuz Atay's heroes are also extraordinary and "weird" people who do not fit in with society, question the meaning of themselves and their environment, but do not worry about reaching a conclusion. As Oğuz Demiralp points out, these heroes are a "collection of negative people" (Demiralp, Atay, 1993, p.7). "[The] intellectuals who have not been able to solve their own problems and have not been accepted by the society, lumpens ruthlessly excluded by society, those driven to suicide and murder in desperation, those who wander on the verge of insanity. Contrary to the usual, these are marginal people, negative heroes" (Demiralp, Atay, 1993, p.7). The common feature of the heroes is their uncertainty. The names of most of them are unknown. It is not known where they live or to which time they belong. These are the people who are mostly passive, cling to life from one place, but do this outside of its meaning value.

The theme of "alienation" of the individual, which is the thematic power of Oğuz Atay's narratives, is a common element commonly used by modernist writers in their works. The life lived is "not being able to adapt to the style, feeling a reaction and as a result withdrawing into the inner world" arises (Yürek, 2008, pp. 187-202). What distinguishes Oğuz Atay from other writers is not only that he is a modernist writer. He gave wide place to irony while constructing his heroes in his works. The reason for the humorous, ironic and sarcastic language in Atay's heroes comes from "having fun with the external reality

that the individual cannot change, without softening it" (Balcı, 2004, pp.52). It can be said that the author wants to overcome the harsh reality of the world in this way.

Oğuz Atay's sixty-five-page long story called Korkuyu Beklerken deals with the contradictory, depressed, gloomy life of his hero and his lurking fear. Fear, which is a universal emotion, and its appearances are presented to the reader with the author's interesting fiction and point of view. According to Yıldız Ecevit, this text "although alludes to the features of the Kafka-type image that calls for pluralistic/independent meanings, [they] contain a structure closer to the univocity of allegory" (Ecevit, 2009, p. 478).

The story begins when an unnamed hero encounters dogs on his way home at night and the dogs bark at him. The person slows down his steps because he is afraid. This fear of the nameless hero against the object originates from himself. The mainspring of fear is its psychological structure with pathological features. Afraid of the dogs, thieves breaking into the house, being alone, despite everything living his life alone, he asks himself the question: "what if one day things go crazy?" (Atay, 1993, p. 38). The behaviors and psychological structure of the hero shows a pathological deviation.

Fear is defined as "[a] perceived danger, unpleasant tension felt at the moment of threat, a strong urge to run or fight, rapid heartbeat, muscle tension, etc. An intense emotional arousal (excitement), anxiety experienced with symptoms" (Budak, 2005, p. 465). The story continues with the person reaching home. However, the fear has not completely disappeared by the time he reaches his home. The hero has a personality that is afraid of the objects around it. He questions the ironic situation he is in with the following sentences:

If you're afraid, why do you live so far from the city? Why do you live in the house at the far end of the street with three houses? What are you doing fifty-five steps from the last flagstone? (Atay, 1993, p. 36)

After a short internal reasoning, he says he has found the reason. The mind of the person, who says that his loneliness increases as he is afraid of being alone, becomes more blurred than before and heads into the house. He notices a strange thing on the shelf at a glance. There he sees an envelope where it shouldn't be. This envelope creates a new wave of anxiety in the nameless hero. Because he has no one to write or receive a letter from. He is alone. After sentences, concerning complex stream-of-consciousness, he comforts himself by thinking that the maid left the envelope there. The story person who cannot open the envelope immediately, opens it after hesitations and encounters expressions in a language he does not know. This note inside the envelope is as if "from no language":

> Morde ratesden, Esur tinda serg! Teslarom portog tis ugor anleter, ferto tagan ugotahenc metoy- doscent zist. Norgunk! UBOR METENGA. (Atay, 1993, p. 39)

These statements causing deep fears inside him refers him to the unnamed protagonist to a fellow faculty member who is an expert in the Department of Dead Languages. After quite complicated internal accounting, he takes the letter to the faculty member two days later and asks him to translate it. His friend doesn't normally have much to do with him. This is evident in their encounters at the university. Two days after their meeting, his lecturer friend calls him on the phone and laughs. He says that they had solved the letter:

> We strongly advise you to never leave your home from the moment you receive the letter. Attention! or we'll warn you! We draw your attention! (…) SUPERİOR WAY or precious sect (…) instead of signature. (Atay, 1993, p. 47)

The revelation and the meaning of the letter causes tension and panic in the hero and he decides not to leave his house. After cleaning the office where he works, he tells the doorman that he will not come for a long time. After this, the days of house arrest begin. This letter, which suddenly appears, is similar to the messages of divine sources with its short and mysterious structure. The meaning of it is not clear, it is written in the imperative and it has a warning nature, which makes this message frightening. The deep emptiness created by inhumanity and godlessness in the person thus leaves its place to fear. Besides the ambiguity of meaning, the only word the hero can understand is the word "Morde". Because this word means murder in Swedish, Norwegian and Danish languages, in "northern languages" as the protagonist of the story says. Even though it is not clearly expressed in the story, this word is the trigger of the shiver and fear that emerges in the inner world of the hero.

One of the most important places in the world for human beings is the home of the person after the womb. As the poetic meaning of space, the house is an integral element, perhaps a mirror of the human being. In the words of Gaston Bachelard: "The house ensures the preservation of acquired things in human life, makes them permanent. If there was no house, man would scatter. The house also keeps people up against the storms descending from the sky. It is both body and soul at the same time. It is the first universe of human existence (Bachelard, 1996, p. 34-35). Space is not much different for the fictional world. "[In]narrative genres, space is fictional and shaped in line with the perspectives, perceptual capacities and sensory developments of the people living in it; it is constantly recreated, shaped, and as an active constituent value, space affects those on it, preparing them for spiritual births and becoming" (Korkmaz, 2007, p.400). It is possible to talk about a tight network of relations between the place and the psychological world of people and their actions. The space of happiness, hope, joy, and courage brings affirmation, expansion into the outside world, while the space of unhappiness, despair, sadness, and fear brings negation and withdrawal from the outside world.

The unnamed hero, fearful of the letter filled with threatening expressions, shuts himself up in his house, where he says "[I] have come here to hide my fears" (Atay, 1993, p. 40). He then begins to explore his home. This discovery turns to a journey to his inner world. The person who decides to wait for death or the 'secret cult members' on the move sees his

pathetic and meaningless life. He makes some decisions. He realizes that he postponed his life because of many things he started and left unfinished, that he could not recover his memory, that he neglected himself and his home. He begins to question some issues about his existence in the house he uses as a shelter. This journey of discovery he made to his inner world was through the letter that caused in him fear. The person realizes that he has actually never lived before receiving the unknown letter (Atay, 1993, p. 61). The secret sect, an enemy whose existence is not openly known, has created a conflict in the person whose inner world is inclined to fear and is prepared, but this conflict is not open. He was particularly disturbed by the psychology he was in, perhaps because he suddenly found himself at home away from the perception of time and space. After being closed at home, this place starts to turn from being a home to a prison for him.

The person who equates things with people and dislikes both of them has withdrawn into his shell. The person, who was already a stranger to society and other people, has now begun to alienate himself. The hero enters into an "outward alienation" (Akatlı, 2009, p. 219). Because the danger that causes him to stay at home is a threat from the outside world. The now more pessimistic, selfish person talks to himself: "If the world were made up of neighborhoods full of people like me, it would turn into a concrete desert. I was a disgrace to humanity and inhumanity. I wanted to feel sorry for myself. Maybe I just was thinking with words were mentioned before. I approached the window, raised my head and looked up at the sky. The moon was there. The moon I knew. No, I wouldn't change a man. I doubted that I even felt real pain." (Atay, 1993, p. 65) He thinks that he is not even as good as the workers who come to dig near his house. He starts working in the garden because he feels a little embarrassed towards them. The person who claims that he did not marry because he was running away from responsibility and fearing that he would not be able to take care of his children is heartbroken when he realizes that the diggers have left the ground next to his house. He is left "next to a pit, threatened by a secret sect, and penniless" (Atay, 1993, p. 71). Faced with hunger because he could not leave the house, the person begins to wait for death. But one day, his door gets knocked on by bank officers and the person learns that he won the lottery and has been paid to his bank account. With the money he gets, he asks for plenty of food from the motorcycle grocer's apprentice, who is the only person he meets and fills his house with food. In the days when the warm autumn is over and the cool autumn comes, he notices a crack going upwards from the foundation of his house. The hero is terrified again. At this rate, the house will collapse. The person, who has started to rot and rot more and more spiritually since the first day he locked himself home, now begins to doubt his reality. He needs to talk, to shout and to call. Otherwise, he will wither away like a potted flower, "as a victim of (…) a secret sect" in his home (Atay, 1993, p. 79). The person who has reached the limit of his existence now raises the flag of rebellion:

> I was accused of wanting solitude and condemned to solitude. I oppose this decision with all my might. I can't stand loneliness. I want to be among people. People need enemies too. (To appreciate friends.) (Atay, 1993, p. 79)

The meaning of life that does not exist for the person, who is alone, in a devastated state, has become even dimmer. His drama is great. Because he has "learned neither suffering nor truly getting afraid" (Atay, 1993, p. 79). From this point on, the person takes on the human psychology that is completely trapped and the meaning of his home begins to change in his eyes. The person who questions his existence and past knows how to make fun of him, unlike people who are caught in the tension of fear and live in a state of pure fear. He tries to complete his unfinished parts. Ironically, he says:

> You reconsidered what happened to me from day one, for a long time. How many days had passed? Like idiots, I didn't write it down again. I was late. Here I was rusting away; my memory was already starting to rust. Loneliness impairs memory. For sure! I wasn't talking to anyone. In the end, I would forget everything except what I talked to the grocer's apprentice. I had to talk, I had to shout, I had to learn. I should have done a doctorate by letter; I should have been an associate professor by letter and a professor by letter. I should have to improve my art knowledge and general culture through letters. I should have to be a lecturer at a university by letter; maybe after a while, I should have started teaching at the university by letter. First of all, I should have spoken. I stood up. I should have started right away. I should have said something. I was about to forget to speak. I should have explained myself. I had to show myself. I had to apply somewhere. (Atay, 1993, p. 78-79)

After that, an intensive learning and information process begins. His graduation from the letter university adds a lot to the hero. "While he is doing his self-criticism, on the other hand, he becomes conscious of the values that have been imposed on him until now and begins to experience a state of full self-awareness" (Tüzer, 2006, pp.17-20).

Although he got a little closer to what he postponed in this process, in fact, positive things never happened to the hero of the story. In this world, even the secret sect eventually found him, but he never found such things as a woman he could love, lots of money, human intimacy (Atay, 1993, p. 83). The person who sinks to the bottom, alone and hopeless, begins to understand nothing from crazy conversations, words and sentences. He's on the verge of insanity. The person, who has never seen the clear transition between being and not being, eventually calls the doctor and tells him to come home (Atay, 1993, p. 88). The person who asks the doctor to be admitted to a fool's house says that he cannot leave the house otherwise. The doctor then diagnoses him as a 'case'. With his schizophrenic appearance he decides to burn down his house when he has nothing to do left at home. There is no point in being regular after this decision. With a wave of delirium and excitement, the person who wants to set the newspapers on fire with the gas can brought by the grocer's apprentice and burn the house catches his eye on a news item in the newspaper:

> Fourteen foreign nationals who were performing rituals in a house outside the city last night were caught upon the notice of their neighbors. During the investigation, they called themselves Ubor Metenga- (…) (Atay, 1993, p.91)

There is no rest of the news. The story person, who falls for a moment in an emptiness, leaves everything as it is and throws himself on the street. The hero, who does not come home for two days, gets disappointed again: "The secret sect also did not turn out as he expected" (Atay, 1993, p. 92). After a new depression he makes evaluations: "the time spent waiting in fear or waiting for fear at [home] had a meaning after all. And meanwhile, my time before I got the threatening letter had also increased in value" (Atay, 1993, p. 93). The hero, experiencing the emptiness of not being attached to anything, suddenly decides to get married and goes to his last relative in the world; uncle, auntie, someone whose exact identity is unknown. The person who opens his marriage request to his relatives and asks for help from them returns to his home, which he has not visited for a long time, and encounters an unexpected sight. There is a crowd in front of his house. In the garden, the police and some officials are waiting for him. He gets ruined. His house has been destroyed. This is a frustration for him. Because the whole order he established in his house with difficulties was destroyed together with the secret sect (Atay, 1993, p. 95). The hero expresses how this order disappeared with these words:

> The order of absolute loneliness did not work for me either. The silence that I have missed for years has also been destroyed. Just as the fear of the secret sect was over, my order was broken. (Atay, 1993, p. 96)

Since the order in his mind is also dependent on the goods, he has now begun to swim in nothingness. In fact, "it can be said that he is trying to control his consciousness, not things" (Irzık, 2009, p.179). The relationship with the opposite gender of this person who is now engaged to a young girl he does not know is not like everyone else's. There's something wrong with her behavior towards him. The hero, who thinks he is ridiculous to everyone, shows unnecessary resentment and anger. He is jealous of other people. Because "they do not know about evil, poverty, secret sect and loneliness, they are unaware of what will happen to them. Because they can act as they feel like" (Atay, 1993, p. 97). The story person who can't stand still because of his greed, decides to do a disservice to people who are happy. He starts writing and sending those Ubor Metenga threatening letters. Then he feels a little comfortable "thinking that they are locked in their homes, trembling with fear" (Atay, 1993, p. 98). In fact, this behavior is the product of projection psychology. He directs and reflects a negative behavior done to him by doing it to others. Finally, he wants to do an irreversible evil to himself. He goes to the nearest police station and reports himself. Going to the police station is to get rid of the fear element of the space, which has become narrow, labyrinthine and closed on him. This behavior of his, with which we can establish intertextuality with Raskolnikov of Crime and Punishment, appears as the way to get rid of the labyrinthine space and the whirlpool that constantly pulls itself in. He is no longer afraid of anyone. He has projected the fear element he has internalized outward with projective paranoia and has surpassed it.

As it can be seen, the heroes of the two stories we are trying to read from a fear-centered perspective have faced similar situations. The heroes of both stories, one animal and a human are unnamed. There are no names of the places where they live. While the hero

of *The Burrow* lives underground, the hero of *Korkuyu Beklerken* lives on earth. In the modernist story and novel, there is no difference between the underground and the earth. They both lead a separate and solitary life, away from the existence of their own kind. The two heroes, who are alienated from their own communities and societies, one day fall into fear because of a situation that they think is threatening, and their inner worlds are turned upside down. In Kafka's story, a noise that the animal hears and cannot fully understand causes fear and panic. In Oğuz Atay's story, the element of fear is a letter written in an unknown language, which has a divine quality, but is absurd. These elements, which are not objective in both, also carry the possibility of being fictionalized in the inner worlds of the story heroes.

Both stories have an element of threat placed behind the tension spring. The noise of unknown who or what made the threatening element in *The Burrow,* is the letter written in a dead language in *Korkuyu Beklerken.* Fearing the attack of an unknown enemy in a state of paranoia, both heroes first panic, then fear, and then engage in research out of curiosity when they encounter the threat element. In *The Burrow,* the source of this curious voice appears as the secret cult that is supposed to have sent the letter in *Korkuyu Beklerken* In fact, their attention is directed towards the source of the threat.

Both heroes, the person in Oğuz Atay's story and the animal in Kafka's story are obsessed. It would not be wrong to say that they are sick in some way. Both of them are constantly worried about the hostile foci they encounter, and they become apprehensive. Their fears are permanent, not temporary. So, actually the presence of an object only changes the degrees of fear. This situation, which we can call anxiety, is a state of anxiety, fear, tension or generally distress. This situation, which is a protective reaction in the effort of living things to adapt to the external environment, complicates the life of the living thing when it cannot be brought under control. As a matter of fact, when they come face to face with hostile beings, the lives of both turn into dungeons. Their homes evoke a state of prison, not peace.

Both story heroes experience intense mental confusion. The heroes constantly focus on possible attack possibilities. Kafka's hero goes out of his home and turns his home upside down to catch his enemy, while Oğuz Atay's hero cannot leave his home.

Both heroes make arrangements inside their houses. The animal is instinctively already organized. Oğuz Atay’s person is attached to his house, and he organizes his house after he is closed. In fact, the arrangement of both heroes' home is to overcome the confusion in their inner worlds.

As trapped beings, both beings are lost in their own labyrinth. Metaphorically speaking, this labyrinth is the confusion of consciousness created by the mind in man. This confusion, which occurs in the form of reckoning, does not lead to a conclusion in humans, but leads to indecision and regret in animals.

In *The Burrow,* this is the space that closes in on itself and becomes a labyrinth, both literally and figuratively. In this labyrinth of fifty rooms, the main place where the ego locates itself is the place called the *Castle Keep.*

There are entities that the human being, the hero of Oğuz Atay, comes into contact with, albeit a little. The animal, on the other hand, has no existence next to it. He only encounters dead animals that tried to prey on him. He always avoids others. The flight of man is a more conscious escape. He prefers solitude as a result of his free choices, but later condemns to solitude because of the secret sect.

While Oğuz Atay's person decides to marry because of inhumanity and disorder, the animal has no such worries.

We see that both of them do not eat for a long time when faced with danger. Oğuz Atay's hero, like an animal who develops thoughts on luck and coincidence, gets a ridiculous chance when he wins the lottery. Because the money he earns is useless because he cannot leave the house. The luck of the animal is rather that an enemy does not enter its burrow.

In *The Burrow*, the underground entity prefers to live in the "Castle Keep" where it feels safe, and to pass from there to other rooms. In *Korkuyu Beklerken* the place where the hero positions himself is the hall. Rooms surround the hall each are locked by turning the key twice. The burrow has a hole that is covered with moss. On the other hand, the house has a door that can be locked and opened with a key. In this framework, a home for a human and for an underground creature is the same.

There is an act of digging in both stories. While an unknown enemy does this in The Burrow, in *Korkuyu Beklerken* the laborers are digging in the plot next to the house. While the house of the man is destroyed, the fate of the animal's home is not known, but at the end of the story, it is implied that it too is doomed and that its home will eventually perish.

As a result, we can say that the story called *Korkuyu Beklerken* written by Oğuz Atay was influenced by Franz Kafka's story *The Burrow.* And it also can be said that he started off from the trapped animal in Kafka's story. The universal common fear of man and animal forms the main theme of both stories. In addition, the state of pure fear and anxiety in The Burrow has changed and transformed as an ontological problem in *Korkuyu Beklerken* and has become a successful and original fiction by combining with ironic and humorous elements.

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