

THE RELATIONSHIP BETWEEN UNDERGRADUATES' COGNITIVE FLEXIBILITY,  
EMOTIONAL SELF-EFFICACY AND INTERPERSONAL PROBLEM-SOLVING  
SKILLS

by  
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EMOTIONAL SELF-EFFICACY AND INTERPERSONAL PROBLEM-SOLVING  
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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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## ABSTRACT

This research was carried out to investigate the relationship between university students' cognitive flexibility, emotional self-efficacy and interpersonal problem-solving skills. The other aims of the study are to examine whether the cognitive flexibility, emotional self-efficacy and interpersonal problem-solving skills of university students show a significant difference according to gender, grade level, educational status of students' parents, program types and age.

The universe of the research consists of university students studying at the undergraduate level in Istanbul in 2020-2021. The sample of the study was determined by convenient sampling and criterion sampling method and consists of university students (n=416) who continue their education at Yeditepe University in 2020-2021 who are studying in the faculties of Social Sciences, Science and Health Sciences.

For the purposes of the research, Personal Information Form, Cognitive Flexibility Inventory, Emotional Self-Efficacy Scale and Interpersonal Problem Solving Inventory were applied to the students. In the next step, Pearson Correlation Analysis was performed to understand the relationship between normally distributed data. After the correlational analysis, independent samples t-test and one-way analysis of variance were used in terms of analysis of differences. The obtained information was analyzed with SPSS 25.0 package program.

In the correlation analysis, a significant relationship was found between university students' cognitive flexibility, emotional self-efficacy and interpersonal problem solving skills. Significant relationships were found between university students' levels of emotional self-efficacy and constructive problem solving, insistent-persevering approach and approaching problems in a negative way. When the relationship between the cognitive flexibility variable and demographic variables was examined, no significant difference was found in the cognitive flexibility levels of university students according to their gender, grade level, education level of their parents, program types and ages.

When it comes to the relationship between emotional self-efficacy and demographic variables, it was determined that university students' emotional self-efficacy levels changed according to their gender, grade level, program type and age. It has been revealed that women's emotional self-efficacy levels are higher than men's. It was found that the emotional self-efficacy levels of the third grade students were higher than the second grade students. Results also showed that the emotional self-efficacy levels of those who study in the field of Social Sciences are higher than those who study in Science. It has been revealed that the emotional self-efficacy levels of those aged 21-22 are higher than those aged 19-20. In the relationship between interpersonal problem solving skills and demographic variables, it was determined that university students' interpersonal problem solving skills changed according to their gender and age.

It has been found that the constructive problem solving levels of women are higher than that of men, and the levels of lack of self-confidence and unwilling to take responsibility approach in men are higher than that of women. It has also been

revealed that the level of approaching problems in a negative way of university students aged 23 and over is higher than those between the ages of 21-22.

**Keywords:** Cognitive Flexibility, Emotional Self-Efficacy, Interpersonal Problem Solving, Close Relationships, Young Adults.



## ÖZET

Bu araştırma, üniversite öğrencilerinin bilişsel esneklik, duygusal öz-yeterlik ve kişilerarası problem çözme becerileri arasındaki ilişkiyi incelemek amacıyla gerçekleştirilmiştir. Araştırmanın diğer amaçları ise üniversite öğrencilerinin bilişsel esneklik, duygusal öz-yeterlik ve kişilerarası problem çözme becerilerinin öğrencilerin cinsiyetlerine, sınıf düzeylerine, anne ve babalarının eğitim durumuna, bölümlerine ve yaşlarına göre anlamlı bir farklılık gösterip göstermediğini incelemektir.

Araştırmanın evrenini, 2020-2021 yılında İstanbul’da lisans düzeyinde öğrenim gören üniversite öğrencileri oluşturmaktadır. Araştırmanın örneklemi, uygun örnekleme ve ölçüt örnekleme yöntemi ile belirlenmiş olup, 2020-2021 yılında Yeditepe Üniversitesi’nde eğitimine devam eden ve Sosyal, Fen ve Sağlık Bilimleri alanlarının bulunduğu fakültelerde öğrenim gören üniversite öğrencileri (n=416) oluşturmaktadır.

Araştırmanın amaçları kapsamında, öğrencilere Kişisel Bilgi Formu, Bilişsel Esneklik Envanteri, Duygusal Öz-Yeterlik Ölçeği ve Kişilerarası Problem Çözme Envanteri uygulanmıştır. Sonraki aşamada normal dağılım gösteren verilerin birbirleri arasındaki ilişkiyi anlamak için Pearson Korelasyonel Analiz yapılmıştır. Korelasyonel analizin ardından farklılıklar analizi anlamında bağımsız örneklem t-testi, tek yönlü varyans analizi kullanılmıştır. Elde edilen bilgiler SPSS .25.0 paket programı ile incelenmiştir.

Yapılan korelasyon analizinde, üniversite öğrencilerinin bilişsel esneklik, duygusal öz-yeterlik ve kişilerarası problem çözme arasında anlamlı bir ilişki tespit edilmiştir. Üniversite öğrencilerinin duygusal öz-yeterlik ve yapıcı problem çözme, ısrarcı-sebatkar yaklaşım ve probleme olumsuz yaklaşma düzeyleri arasında anlamlı ilişkiler tespit edilmiştir. Bilişsel esneklik değişkeninin demografik değişkenlerle olan ilişkisi incelendiğinde, üniversite öğrencilerinin cinsiyetleri, sınıf düzeyleri, anne ve babalarının eğitim düzeyleri, bölümleri ve yaşlarına göre bilişsel esneklik düzeylerinde anlamlı bir farklılık bulunmamıştır.

Duygusal öz-yeterlik düzeyinin demografik değişkenlerle olan ilişkilerinde ise üniversite öğrencilerinin duygusal öz-yeterlik düzeylerinin cinsiyetlerine, sınıf düzeylerine, bölümlerine ve yaşlarına göre değiştiği saptanmıştır. Kadınların duygusal öz-yeterlik düzeylerinin erkelere göre daha fazla olduğu ortaya çıkmıştır. Üçüncü sınıf öğrencilerin duygusal öz-yeterlik düzeylerinin ikinci sınıflara göre daha fazla olduğu ortaya çıkmıştır. Sosyal bilimler alanında öğrenim görenlerin duygusal öz-yeterlik düzeylerinin fen bilimlerinde öğrenim görenlere göre daha fazla olduğu ortaya çıkmıştır. 21-22 yaş aralığında bulunanların duygusal öz-yeterlik düzeylerinin, 19-20 yaş aralığında bulunanlara göre daha fazla olduğu ortaya çıkmıştır. Kişilerarası problem çözme becerisinin demografik değişkenlerle olan ilişkilerinde ise üniversite öğrencilerinin kişilerarası problem çözme becerilerinin cinsiyetlerine ve yaşlarına göre değiştiği saptanmıştır.

Kadınların yapıcı problem çözme düzeylerinin erkeklere göre, erkeklerin kendine güvensizlik ve sorumluluk almama düzeylerinin ise kadınlara göre daha fazla olduğu ortaya çıkmıştır. 23 yaş ve üstü üniversite öğrencilerinin probleme olumsuz

yaklaşma düzeylerinin, 21-22 yaş aralığında bulunanlara göre daha fazla olduğu ortaya çıkmıştır.

***Anahtar Kelimeler:*** Bilişsel Esneklik, Duygusal Öz-Yeterlik, Kişilerarası Problem Çözme, Yakın İlişkiler, Genç Yetişkinler.



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## CHAPTER I: INTRODUCTION

### 1.1. Problem Statement

Life is a process of adaptation. People are born, continue their lives by adapting to the processes brought by the period they are in, and then die. Although many scientists have different ideas about developmental periods, young adulthood covers the ages of approximately 18-26 years, and this process is a period of biological and psychological change/development, and it is also critical for shaping future generations (Council & Medicine, 2015). During the young adulthood period, which acts as a bridge for the individual in terms of the end of adolescence and access to adulthood: As individuals academically embark on university life they experience important experiences in terms of autonomy, career development and close relationships (Capuzzi & Stauffer, 2016). The young adulthood period, which is accepted as a transition period, has a very important place in human life in terms of being oriented towards society, life and the world, being ready to take on the responsibilities that require being an adult, reaching cognitive maturity, having a personality and a well-established character (Kılıç, 2013). In this period, since the search for identity ends and the personality structure of the individual is settled, the individual is now ready to fuse his identity with others, he is ready to establish close relationships in order to end the complexity between intimacy and isolation and to gain love, which is the psycho-social power of the period he is in (İnanç, Yerlikaya, 2015). Therefore, it is very important to deal with the interpersonal relationships of university students who experience the young adulthood period and to examine the cognitive and emotional skills they acquire in their related relationships.

People are social beings, from birth onwards, they enter into many relationships with other people voluntarily and involuntarily, based on the context they are in (Dwyer, 2014). Examples of these relationships are work relationship, friendship relationship, romantic relationship and familial relationships. In order for the individual to lead a harmonious and healthy life in the society he lives in, his behaviors and attitudes in his interpersonal relationships serve as a key (Saymaz, 2003). Since intimacy is accepted as a developmental need for university students in young adulthood, if they cannot establish healthy relationships, they develop stereotypical interpersonal relationship styles and as a result, they may drag themselves to a life isolated from others (Erikson, 1968). In the relationships that individuals are in, which are different from relationship to relationship: Considering that there are internal selves that are constantly changing through interactions with others and new experiences, it is thought that the experiences in relationships in young adulthood are very important and the cognitive/emotional characteristics of the individual are effective on these experiences (Rosenblatt & Wieling, 2015). In this sense, the personal characteristics of individuals such as cognitive flexibility, emotional self-efficacy, sense of responsibility, speed of adaptation, conscientiousness, extraversion, emotional stability, being controlling/resistant have a role in facilitating interaction in their interpersonal relationships, even solving conflicts in close relationships, not postponing problems seem to play an important role in observing constructive behaviors (Asıcı & Uygur, 2017; Doğan Laçın, 2015; Elkins, Kassenboehmer, & Schurer, 2017; Leikas & Salmela-Aro, 2014; Pusch, Mund, Hagemeyer, & Finn, 2018).

When the field of close relationships psychology is examined, it is stated that individuals with advanced problem-solving skills also maintain healthier interpersonal

relationships (Ergin, 2009; Koç, 2016; Londahl, Tverskoy, & D'Zurilla, 2005). In general terms, according to Dzurilla and Chang (1995), the concept of problem solving can be considered equivalent to the coping methods/skills of individuals in real life situations. By definition, the concept of problem solving can be considered as the process in which individuals direct themselves, discover or try to develop appropriate coping solutions for acute and chronic problems they encounter in their daily lives. Accordingly, there are four stages to effective problem solving. First one is defining and formulating the problem, the second one is generating alternatives, third one is decision making and fourth one is implementation and confirmation of the solution. Individuals who can complete these stages and solve the problems they face in a healthy way can be said to have high levels of optimism, positive interpersonal competencies, high social adaptability and strong empathy skills (Nezu, Nezu, & DZurilla, 2013). Consistent with this statement, according to Koç, Terzi, and Gül (2015), individuals who have effective problem-solving and communication skills can effectively cope with the problems they experience in their interpersonal relationships, and their ability to establish positive relationships with people is also high. It has even been proven that people with high emotional skills exhibit a more accommodating way of interpersonal communication. This is an indication of the importance of the concept of problem solving in social relations.

According to Londahl et al. (2005), interpersonal problem solving is considered a subset of social problem solving that focuses on interpersonal conflict resolution. The importance of emotions in interpersonal and social problem solving is undeniable. As evidence for this statement, Koç et al. (2015) conducted on young adults and compared their communication skills and interpersonal problem solving skills, it was found that the participants with insufficient sense of trust were

inadequate in terms of solving the problems they experienced in their interpersonal relationships. On the other hand, the same research reveals that individuals who can control their anger can maintain their communication skills, therefore their interpersonal problem solving skills in a more constructive way. Similarly, in the study conducted by Nelson (2018) on young adults, it was emphasized that individuals with mental fatigue had insufficient social problem-solving skills and this could only be changed positively with positive emotions. In this sense, it has been concluded that positive affect prevents individuals from taking wrong steps against difficult situations in their relationships. Similarly, in the study of Krishnakumar, Perera, Hopkins, and Robinson (2019), it has been stated that people with high emotional skills have a positive relationship with extraversion, agreeableness, reconciliation and problem-solving strategies. In this sense, emotional skills, emotional resources and emotional competence covered by the concept of emotional intelligence affect the capacity of individuals to cope with challenging emotional situations (Itzkovich, 2020). According to Perez, Merino, Ariza, and Galicia (2017), emotional competence, which is accepted as the applied version of emotional intelligence, also affects the relationships that a person establishes with his/her environment.

The concept of competence, which is thought to be an important concept in interpersonal relations, also appears as 'Socio-emotional competence'. According to the study conducted by McBrien, Bild, and Bachorowski (2018) on university students, emotional behaviors affect people's social interactions. In addition, in the same study, personality traits such as emotional intelligence, social intelligence, empathy and interpersonal sensitivity, as well as self-efficacy which is recognizing and identifying emotions, self-management, social awareness, empathy and respect

for others and responsible decision making which is personal, social and ethical responsibility. In this context, it was found that socio-emotional competence, including problem solving, is related (Ahmed, Hamzah, Abdullah, 2020) and the level of socio-emotional competence in people's social relations is directly proportional to the level of flexibility. In the study conducted by Kapeleris and Paivio (2011) on close relationships in young adults, it was stated that emotional competence is a central factor in bilateral relationships. According to this study, when a person develops from childhood to adulthood, if the level of emotional competence is low, they may have difficulty not only in their ability to regulate their own emotions, but also in responding constructively to the emotions of others. As a result, if the emotional competence of the person does not reach maturity, he has problems in understanding and expressing his own feelings and needs help in solving the problems in his relationships with others. Consequently, problem solving skills in close relationships are negatively affected. In this sense, emotional competence in close relationships emerges as an important element in relation to interpersonal problem-solving skills.

Another factor that is stated to be related to the interpersonal problem-solving processes of individuals in the field of close relationships is the concept of cognitive flexibility. Cognitive flexibility (shifting) refers to our ability to switch between different mental sets, tasks or strategies (Archambeau & Gevers, 2018). Cognitive flexibility is a feature that helps people multitask, find adaptive solutions to changing situations/demands, and perform complex tasks. It is necessary to see cognitive flexibility as a feature of the cognitive system rather than a skill. The emergence of cognitive flexibility can be attributed to two types of interactions. First, the interaction of several cognitive mechanisms and the latter which is the interaction of sensorimotor mechanisms, cognition, and context in developmental time. It can be

said that individuals with high cognitive flexibility have well-developed problem solving skills and creativity (Ionescu, 2012). Problem solving is a comprehensive and complex cognitive process that involves meta-cognitive thinking, including identifying and deciding the most effective solution. In the research conducted by Aygün (2018), it was determined that the characteristics of cognitively flexible individuals, that is, those who can express the way they acquire and use information, are also advanced in terms of problem solving skills. As a result of this research, it has been concluded that individuals with problem-solving skills can systematically and decisively understand the source of the problem, use various decision-making techniques, and produce alternative solutions. In addition to the individual's cognitive flexibility, according to Harris (2017), the effect of flexible social cognition on individuals' relationships cannot be ignored. Confirming this concept, Bilgin (2009)'s study with university students emphasized that cognitive flexibility is related to interpersonal relationships and problem solving, and it was concluded that individuals with high cognitive flexibility were able to constructively carry out their problem-solving skills in their interpersonal relationships. In the study conducted by Kurt and Gündüz (2020), it was determined that individuals with high cognitive flexibility have low irrational romantic relationship beliefs, that is, they maintain healthier relationships.

Another variable that is thought to be related to individuals' interpersonal problem-solving skills is emotional self-efficacy. When the origin of this concept is examined, the assumptions of Bandura's Social Learning Theory stand out. According to the related theory, the concept of self-efficacy can be defined as the self-perceptions and judgments that an individual develops for the capacity to organize and successfully perform the necessary activities in order to perform a performance

(Bandura, 1997). It is important to evaluate the concept of self-efficacy not as a skill, but as a perception, because this term indicates the perception of the person's capacity to cope, not the capacity to cope with the environmental events encountered (İnanç, Yerlikaya, 2015). The basic features of the concept of self-efficacy can be grouped under three headings: Cognitive, emotional and control process. These characteristics indicate that emotions are an important part of the concept of self-efficacy. Since emotional reactions will affect people's actions by affecting the thought process, emotional processes serve as a key to the concept of self-efficacy (Arseven, 2016). The concept of emotional self-efficacy includes the personal perception of the person's emotional functioning level (Totan, İkiz, & Karaca, 2010).

Accordingly, the belief that a person can manage his/her own emotional world plays an important role in understanding and expressing his/her own feelings and understanding the feelings of others (Watson, 2016). Confirming this statement, Çatal (2019), in his study on young adults concluded that individuals' awareness of their own and others' emotions, their capacity to manage their emotions, and their level of insight are effective in maintaining healthy interpersonal relationships. Aydoğdu, Çelik, and Ekşi (2017) found that emotions play an important role in social interactions in young adults, and it was accepted that social interactions include emotional ability and that there is a strong connection between these two concepts. The fact that people have negative emotions has been said to possibly cause a decrease in social competence, thus resulting in difficulties in social relations and/or social anxiety. Similarly, in the study conducted by Adiloğulları and Şenel (2014) on university students, it was revealed that self-efficacy and emotional intelligence are social factors that adults can use in their relationships. As a result of this research, it

can be deduced that individuals with high emotional self-efficacy levels can establish healthy relationships.

When the studies in the literature that include the relationship between emotional self-efficacy and cognitive flexibility are examined: According to Demirtaş (2019), cognitive flexibility was found to be associated with mental well-being in adolescents. It has been stated that coping strategies are more positive in individuals with cognitive flexibility. In the same study, it was concluded that cognitive flexibility also predicts emotional self-efficacy in individuals. In the study of Çelikkaleli and Kaya (2016) with university students, a positive and significant relationship was found between cognitive flexibility and emotional-self-efficacy. In the study conducted by Çelikkaleli (2014) on adolescents, it was concluded that there is a positive and significant relationship between the emotional self-efficacy and cognitive flexibility of individuals. Accordingly, individuals' ability to develop strategies to cope with the emotional state they encounter is related to their cognitive flexibility and emotional self-efficacy. In the study of Özcan and Esen (2016), it was determined that the concepts of self-efficacy and cognitive flexibility are theoretically related, and that adolescents with high cognitive flexibility also have high emotional self-efficacy.

When studies conducted in Turkey and abroad are examined, it is seen that interpersonal problem-solving skills, which allow young adult individuals to maintain their relationships in a healthy way, are related to cognitive flexibility and emotional self-efficacy (Aydoğdu et al., 2017; Caprara et al., 2008; Çutuk, Aydoğan, 2019; Parlaktaş, 2018; Sucu, 2020). However, no research has been found that has brought the mentioned variables together and examined the relationship between them. For this reason, especially for mental health service providers working in the field,

working as psychological counselors at universities, clinical psychologists and family counseling experts, this research will focus on the emotional and cognitive characteristics of individuals in young adulthood and will show whether there is a relationship with their problem-solving skills. This study will make an important contribution to the literature. Therefore, the problem statement of the research is summarized as: “Is there a significant relationship between cognitive flexibility, emotional self-efficacy, and interpersonal problem-solving skills of college students in young adulthood?”

## **1.2. Purpose of the Research**

The aim of this study is to examine the relationship between cognitive flexibility, emotional self-efficacy, and interpersonal problem-solving skills of university students in young adulthood. The sub-objectives in line with this main purpose are as follows:

- a. What are the cognitive flexibility levels of university students?
- b. What are the emotional self-efficacy levels of university students?
- c. What are the levels of interpersonal problem-solving skills of university students?
- d. Is there a significant relationship between university students' cognitive flexibility, emotional self-efficacy levels and interpersonal problem-solving skills?
- e. Do university students' cognitive flexibility levels differ significantly by gender?
- f. Do university students' cognitive flexibility levels differ significantly according to age?

- g. Do university students' cognitive flexibility levels differ significantly according to their grade levels?
- h. Do university students' cognitive flexibility levels differ significantly according to their program types?
- i. Do university students' cognitive flexibility levels differ significantly according to their mothers' education levels?
- j. Do university students' cognitive flexibility levels differ significantly according to their fathers' education levels?
- k. Do university students' emotional self-efficacy levels differ significantly by gender?
- l. Do university students' emotional self-efficacy levels differ significantly according to age?
- m. Do university students' emotional self-efficacy levels differ significantly according to their grade levels?
- n. Do university students' emotional self-efficacy levels differ significantly according to their program types?
- o. Do university students' emotional self-efficacy levels differ significantly according to their mothers' education levels?
- p. Do university students' emotional self-efficacy levels differ significantly according to their fathers' education levels?
- q. Do university students' interpersonal problem-solving skills differ significantly by gender?
- r. Do university students' interpersonal problem-solving skills show a significant difference according to age?

- s. Do university students' interpersonal problem-solving skills show a significant difference according to their grade levels?
- t. Do university students' interpersonal problem-solving skills differ significantly according to their program types?
- u. Do university students' interpersonal problem-solving skills differ significantly according to their mothers' educational status?
- v. Do university students' interpersonal problem-solving skills differ significantly according to their fathers' educational background?

### **1.3. Postulates of the Research**

The information to be obtained in this research is based on some assumptions:

1. It is assumed that the young adults constituting the sample group gave genuine, sincere and voluntary answers to the questions.
2. It is assumed that the data collection tools used in the research are suitable for the purpose of the research.

### **1.4. Limitations of the Research**

1. The sample of this study is limited to Yeditepe University students.
2. The results of the study are limited to the results of Cognitive Flexibility Inventory, Emotional Self-Efficacy Scale and Interpersonal Problem Solving Inventory.
3. Since the appropriate sampling method was used in the study, the results are limited to the number of participants that the researcher can reach.

4. Since the education level of the families will be measured subjectively in the study, the sample is limited to the answers given by the Yeditepe University students to the questions in the Personal Information Form.

### 1.5. Definitions

**Cognitive Flexibility:** Cognitive flexibility (shifting) refers to our ability to switch between different mental sets, tasks or strategies (Archambeau & Gevers, 2018).

**Emotional Intelligence:** It is the capacity of individuals to perceive and process their emotions effectively (Zysberg & Raz, 2014: 3).

**Self-Efficacy:** It is the belief that people have in their abilities required for the performance levels they need to produce in the face of the events they encounter in their lives. These beliefs are; cognitive, motivational, emotional and selection processes (Grusec, 1992).

**Emotional Self-Efficacy:** Perceived abilities towards emotions (Petrides, Sangareau, Furnham, & Frederickson, 2006).

**Problem Solving:** It is the process in which individuals direct themselves, discover or try to develop appropriate coping solutions for acute and chronic problems they encounter in their daily lives (Nezu, Nezu, & DZurilla, 2013).

## **CHAPTER 2: RELATED LITERATURE**

In this section, theoretical information about the concepts of cognitive flexibility, emotional self-efficacy and interpersonal problem-solving skills, which are the subject areas of the research, are presented.

After the theoretical framework, researches on related concepts are mentioned.

### **2.1. Cognitive Flexibility**

In today's world, individuals have to adapt to many changes they encounter in their daily lives in order to survive. This constant need to adapt creates the need to be flexible and responsive. Psychological flexibility is the ability of an individual to establish a healthy contact with the time he lives, to accept his feelings, thoughts and individual experiences, and to change or terminate his behavior in accordance with the requirements of the situation. In short, emotional flexibility is the capacity to give adaptive responses in the face of difficulties (LeJeune & Luoma, 2019; Lundgen, Luoma, Dahl, Strosahl, & Melin, 2012).

As mentioned above, the situations that need to be dealt with in the changing world also reveal the need for one's cognitive flexibility. The concept of cognitive flexibility was first introduced by Spiro and Jehng in 1990 (Çelikkaleli, 2014).

According to Spiro and Jehng (1990), cognitive flexibility is the ability of a person to instantly reconstruct his knowledge and develop adaptive responses despite changing situations. Salmerón, Cañas, and Fajardo (2006) defined the concept of cognitive flexibility as the ability of a person to face situations that he encounters for the first

time in his life or unexpectedly, to develop coping strategies by adapting, and/or to use cognitive processing strategies in the face of such events. According to Martin and Anderson (1998), cognitive flexibility refers to being aware of the alternatives that one can create in communication with others, being willing to adapt to any situation, and having a high level of self-efficacy to be a flexible individual in general in his life. Explaining the diversity of cognitive content with concepts such as attitudes, beliefs, and values, Scott (1962), expressed cognitive flexibility as a feature of the meaningful structure of cognition, such as the concepts of differentiation, integration and rigidity. On the other hand, he expressed the definition of cognitive flexibility as the state of being constantly available in order to selectively change the conceptual system of the individual in the face of environmental stimuli.

Martin and Rubin (1995) stated that one chooses how to behave in the situations he encounters and defined cognitive flexibility with three characteristics. These are: It is the awareness of being able to see suitable alternatives and options in any situation, the willingness to be flexible and adapt to the situation, and the level of self-efficacy necessary to be flexible. In other words, cognitive flexibility is the ability to adapt cognitive processing strategies to face new and unexpected circumstances in the environment. Payne, Bettman, and Johnson (1993) discussed the concept of cognitive flexibility in terms of three different characteristics. The first of these features is that cognitive flexibility can be developed through the learning process, so experience is required to develop this skill. The second feature is that cognitive flexibility involves adapting cognitive processing strategies. The expressed concept of strategy is explained as a sequence of operations investigating the problem area. For this reason, the concept of cognitive flexibility expressed here refers to changes in complex behaviors rather than changes in abstract responses. Finally, it has been emphasized

that cognitive flexibility is the process of adapting to new and unexpected environmental changes after performing a task (as cited in Salmerón et al., 2006).

On the other hand, it is thought that the concept of cognitive inflexibility, which is the opposite of the related concept, should be examined in order to make sense of the concept of cognitive flexibility. Salmeron et al. (2006) evaluated the concept of cognitive inflexibility under the Psychology of Thinking and explained it with four different sub-concepts. The first is the concept of cognitive blockade. Cognitive blockade is the tendency to continue with the first course of action in situations where the individual needs to take alternative actions. The second concept is cognitive hysteresis, also known as cognitive narrowing. Cognitive hysteresis is the tendency to continue the same behavior or thought even after a behavior/thought has been proven to be wrong, even after knowing that it is wrong. The third concept is functional fixation. Functional fixation is that individuals' perceptions are fixed or rigid. For this reason, individuals tend to be unable to adapt to innovations, including objects in their daily lives. The last concept is functional reduction. The concept of functional reduction is the tendency of the individual to reduce the problem to a single cause, neglecting all other possible causes. In this context, it is thought that individuals who are cognitively flexible do not have the tendencies required by the sub-concepts of cognitive blockade, cognitive hysteresis, functional fixation and functional reduction.

When cognitive flexibility is viewed from a developmental perspective, it is stated that flexibility decreases as individuals get older. It has been determined that especially preschool and adolescence individuals are more flexible than adults, but they also have more difficulties in cognitive tasks (Gopnik et al., 2017). Baltes, Lindenberger, and Staudinger (2006) stated that there are three concepts that are

important in terms of cognitive development in young adulthood. These concepts are versatility, interpersonal differences and the language skills of the person (Klein, 1996) which develop in direct proportion to cognitive flexibility levels (as cited in İnanç, Aıcı, Bilgin, & Gürkan, 2019). Functional dialogues of young adults, in particular, involve a high level of operational processing. Although the skills related to metacognition reach more mature levels in young adulthood, flexibility emerges as a phenomenon shaped by experience, as it is related to the practical and creative intelligence of the individual, performing different tasks at the same time and establishing harmonious relationships with the environment (Botvinick, Braver, Barch, et al. Carter, & Cohen, 2001; Sternberg, 2000). While cognitive flexibility is a feature that helps individuals to multitask (Ionescu, 2012), multitasking skills support the cognitive development of young adults (Courage et al., 2015). It is stated that university students' multitasking skills are especially effective on performing cognitive tasks and socialization (Xu et al., 2016), and individuals with high multitasking skills will increase their creativity levels together with their cognitive flexibility (Kapadia & Melwani, 2021). In this case, it is assumed that the development of cooperation among young adults in their bilateral relations will take them to an advanced level in the cognitive sense (Azmiata, 1996).

The Cognitive Behavioral Therapy model, one of the theories explaining cognitive flexibility, is concerned with the cognitive, emotional, motivational and behavioral responses of individuals to the events/situations they encounter in their lives. The main purpose of the model is to focus on the maladaptive responses that may arise due to misperception or misinterpretation, and the maladaptive, that is, non-functional or individual interpretations. It argues that the cognitive system includes the way people understand, interpret and give meaning to events (Wedding & Corsini,

2010). According to the cognitive model, cognitive structures such as thoughts, beliefs, attitudes and rules have a great importance in examining the emotions and behaviors of the person (Özdel, 2015). The main purpose of the theory, which is based on people's individual beliefs and behavior patterns, is to provide emotional and behavioral change by focusing on people's thought and belief systems (Beck, 2011).

Cognitive behavioral therapy explains the prejudices of the person about himself, the world and the future with two basic concepts; cognitive shifts and schemas. Cognitive shift/error is interpreting situations or events with a selective bias. The structure that constitutes the whole of cognitive, emotional, motivational and behavioral systems that ensure the survival of individuals is schemas. Cognitive schemas include perceptions of oneself and others. If it is not controlled, it affects a person's life completely (Wedding & Corsini, 2010).

Cognitive behavioral therapy, which emerged as a result of Beck's cognitive model, has some features different from the therapy methods that were established before. According to these characteristics, this therapy model proceeds with a focus on the here and now. It involves a structured and short-term process. It aims to solve existing problems and/or change dysfunctional, useless and faulty thought patterns (Beck, 1964).

The principles on which Cognitive Behavioral Therapy is based are as follows: Since each person's cognitive terms and problems are unique, individual and reorganizable conceptualizations should be made in the process. There should be a mutual cooperation between the therapist and the client. This requires the active participation of the client. Progress towards a specific goal is problem-oriented. In this therapy method, which has an educational aspect and time limitation, the therapist

teaches the client to be their own therapist, in case the problem may recur in the future. It aims to empower people to identify, evaluate, and respond to their dysfunctional thoughts and beliefs. The process proceeds by using techniques to change a certain behavior, thought and mood (Beck, 2011).

The purpose of using the mentioned techniques, according to Beck (1970), is to identify certain misunderstandings, maladaptive assumptions and cognitive distortions of the individual and make appropriate corrections. Cognitive distortions are unrealistic evaluations and automatic thoughts of one's inner and outer world. These distortions usually lead to intellectual, behavioral and emotional problems (Fair, 1986). When the cognitive distortions that individuals often unconsciously refer to in their lives are examined, it is striking that they act without cognitive flexibility. For example, individuals may have cognitive distortions such as making arbitrary inferences, overgeneralizing, magnification/minimization, all-or-nothing thinking, selective abstraction, labeling, catastrophizing, personalization, mind reading, and must-have thinking. Making arbitrary inferences refers to making inferences without any evidence, and usually these inferences are deviant thoughts about one's self under the name of personalization. Overgeneralization is when one generalizes to all other similar events based on just one event. Magnification/Minimization is the tendency to exaggerate or underestimate an event, often by setting up disaster scenarios (Beck, 1970; Dawes, 1964). All-or-nothing thinking refers to the polarized thoughts of a person as either doing something exactly as he/she wants it or not having it at all (Oshio, 2009). Selective abstraction is the development of thought based on a single piece of evidence, even though there is a lot of evidence about the situation in which a person lives. Labeling is the production of negative and judgmental adjectives for oneself or the environment for the purpose of suffering / inflicting despite the

evidence available (Beck, 1963). Catastrophizing is the production of bad scenarios for the future by ignoring other possibilities in the situations in which the person lives. Personalization is making negative inferences about oneself in situations that have little or no relevance to oneself. Mind reading is a person's belief that he or she knows what other people's thoughts are about themselves or others. "Should" statements, on the other hand, are the belief of a person about how to behave towards other people or himself (Çekiç, 2020). In line with this information, it is thought that individuals who have cognitive distortions also have negative rigid thoughts and therefore do not have cognitive flexibility.

When cognitive behavioral therapy techniques are considered, while teaching the relevant functional and distorted thoughts, techniques such as searching for evidence, re-interpretation, the best friend technique, the use of humor, the use of pictures and cartoons, the use of metaphors and stories, coping with catastrophic scenarios, imagination and imagining a safe place are the most striking ones. In particular, cognitive restructuring technique is thought to be related to cognitive flexibility as it includes approaching events from different angles, evaluating events realistically and in the light of existing data. As Johnco, Wuthrich, and Rapee (2014) stated in their study, cognitive behavioral therapy techniques have a close relationship with the concept of cognitive flexibility, and the purpose of the cognitive restructuring technique is to teach the client to identify the person's automatic thoughts and to develop more functional ways by evaluating these thoughts. The main purpose of using the restructuring technique is to enable the client to gain cognitive flexibility. In this direction, it has been found that individuals with cognitive flexibility provide more benefits from the restructuring technique in order to alleviate their emotional distress. Another technique associated with cognitive flexibility is the use of

metaphors. This technique aims to make the person realize their existing negative automatic thoughts and distorted views (Mathieson, Jordan, Bennett-Levy, & Stubbe, 2018) by making them more vivid. The use of metaphor, which is used to stretch the thoughts of the client who has rigid thoughts and also aims to give the person the flexibility of interpretation, aims to give flexibility to the thoughts after the person realizes his negative automatic thoughts during the therapy process (Camp, 2015; Kaya, 2020; Mácha, 2020).

Ellis, who is the founder of the Rational Emotive Behavior Therapy model, which is thought to be related to cognitive flexibility, was first introduced to the theory as rational-emotive therapy, since the names cognitive therapy or cognitive behavioral therapy were used before, and then in 1993 because the theory also emphasized the behavioral dimension of the person from the very beginning. The rational-emotive behavioral therapy model has been named appropriate. Ellis, who attaches great importance to the concept of mind and mental interpretations of the person, defined the concept of rational as an effective cognition and self-help. In particular, he emphasized that he combined the elements of humanism, realism and existentialism with rationalism, as opposed to classical rational thought, that is, to the approaches that argue that the mind is the absolute authority and that only the mind is important about what should be done and how it should be done. As a result, the mutual interactions between cognition, behavior and emotion formed the building block of the theory (Ellis, 1995). In addition, the theory, which emphasizes thoughts, feelings and actions, states that these three elements can be made productive or changed, together with the innate tendency of the person, by self-education (Ellis, 2001).

According to the theory, people observe their primary dysfunctional emotions and think negatively about those emotions and come to a negative conclusion about their own fears. Referring to this example, Ellis (2001) emphasized primary and secondary symptoms in individuals and stated that generally primary symptoms are emotional, cognitive, and behavioral, while secondary symptoms are more cognitive. In short, when people are worried, they create irrational thoughts and harm themselves.

Ellis and Dryden (1997) stated that they used a method called the ABC model to examine the irrational thoughts mentioned above and to conceptualize the problem, namely cognitive distortions. According to this model, one can define ABC as, A: a triggering event, B: the person's feelings about the event and C: the behavioral or emotional expression of one's feelings about that event or its consequences. In this model, the effect of B on individuals was investigated and it was stated that the cause of psychological disorders was cognitive distortions. These distortions are: All-or-nothing thinking, creating negative and irrelevant results, focusing on the negative, disqualifying the positive, minimizing, emotional reasoning, labeling and overgeneralizing, personalization, and perfectionism (Ellis, & Dryden, 1997).

The Rational Emotive Behavioral therapy model aims to provide alternatives for people to have more flexible and non-rigid thoughts about their beliefs, feelings and behaviors during the therapy process (Ellis, 2002). The theory defines goals such as self-acceptance including cognitive flexibility, creating realistic expectations and taking risks in order to reach life values. This approach, which draws attention to cognitive flexibility, associates individuals' ability to solve their problems effectively, establish healthy interpersonal relationships, and be cognitively flexible individuals

(Altunkol, 2011; K ro lu, 2011). Emphasizing that therapists must first have flexible thoughts in order to benefit clients (Ellis, 2002), this therapy model states that individuals can react more aggressively when they encounter someone who opposes their rigid thoughts (Nielsen, Johnson, Ellis, & Weiner, 2001) therefore determines cognitive flexibility as a criterion for being psychologically healthy. The theory states that individuals who do not have cognitive flexibility, that is, those who have rigid and absolute thoughts to upset themselves, are affected not only by their culture and parental teachings, but also by their own configurations and biological tendencies (Nielsen et al., 2001). On the other hand, the relevant theory defines healthy and mature individuals as individuals who can produce individual thoughts, are open to change, are not bigoted, and have pluralistic thoughts towards others, and see them as cognitively flexible individuals (Dryden, David, & Ellis, 2010; Ellis, 2010). & Dryden, 1997).

Cognitive Flexibility Theory, which is another model that explains cognitive flexibility, also called Learning and Teaching Theory, developed for the business world, students and instructors, was developed in the light of / as a continuation of the schema therapies that existed before the theory and to serve as a bridge between these therapies. The aim of the theory is to replace previously prepared information in people with more adaptable and explicit information. The handicap of this purpose is that each field of knowledge or professional practice has an irregular relationship with each other, and the wide-ranging abstractions and general principles in these fields cannot be adequately explained in the real world. The theory has four main goals. These targets are: It is to create hyper-media learning environments in order to enable people to learn important and difficult topics, to facilitate the flexible use of information in a way that can be adapted to daily life or real-world environment, to

change the underlying thought patterns, and to provide complex learning and flexible information application. The aim of the theory is to instill these four goals in people. Finally, the theory argues that people who are adept at dealing with the complexity of the world and continue their lives as members of a society need to think independently, adaptably and creatively in order to perform their twenty-first century business (Spiro, Collins, Thota, & Feltovich, 2003).

While Spiro, Feltovich, Jacobson, and Coulson (1991) explain the concept of 'cognitive' in the theory of cognitive flexibility as using previous knowledge appropriately while acquiring new knowledge and providing a configuration between old and new knowledge, they expressed the concept of 'flexibility' as the ability to use the new information obtained in any situation.

The concept that forms the basis of Social Cognitive Learning Theory, another theory related to cognitive flexibility, is self-efficacy. The aforementioned concept is based on cognitive beliefs that are influenced by four types of experience, unlike self-perception. These beliefs are as follows: Performance accomplishments, vicarious experience, verbal persuasion, and physiological states (Zimmerman, 2000). Performance accomplishments occur as a result of the individual's personal experiences and is therefore considered to be the most effective source of self-efficacy belief. On the other hand, indirect experience is when someone else predicts the results of their experiences by taking a model. The effect of the belief of verbal persuasion, which the individual develops by referring only to what he hears without witnessing any event, and therefore has less validity than the other two concepts, depends on the reliability of the person conveying it. Finally, the physiological belief is a person's self-beliefs that he generally perceives as inadequate, such as stress and

fatigue, and that he develops by referring to his own physiological reactions (Bandura, 1982). For this reason, each performance determinant plays an important role in the internalization and integration of one's self-efficacy perception (Gist & Mitchell, 1992).

Social Cognitive Theory, which deals with human behavior states that there is a continuous interaction of cognitive, emotional and environmental determinants (Bandura, 1977). According to the theory, the dominance of emotions is an important skill for social emotional learning, which is also a maturation and development process for individuals. This approach, which refers to children and young people, deals with life tasks that people have to fulfill according to their age groups (Uşaklı, 2017). When the theory is examined in terms of cognitive determinants, the concept of cognitive flexibility draws attention. Bandura (1977) who thinks that thought processes can decouple from concrete references and be flexible, states that thoughts can be manipulated to produce other thoughts, fantasies and unusual ideas that are not limited to symbols embedded in reality which go beyond the boundaries of that reality. For example, one can imagine/think about elephants riding on flies even though they know it is impossible. It expresses that flexibility to symbolize thoughts and getting rid of reality constraints expand the scope of thought.

## **2.2. Emotional Self-Efficacy**

Emotions are thought to be important in terms of getting to know people and making sense of their cognitive aspects and relationships. There is no single definition of emotions, but many scientists who have worked in the field of mental health have mentioned emotions in their theories. For example, Buck (2014), who examines emotions from a biological point of view and argues that emotion and cognition are

two inseparable parts, emphasizes motivational-emotional systems. He stated that one of these concepts cannot exist without the other, that is, an individual's cognition cannot be conceptualized if his motivation and emotions are not taken into account. It is stated that these three concepts are interrelated, that is, motivation includes emotion and cognition, cognition includes emotion and motivation, and emotion includes motivation and cognition. In this sense, he defined emotions and desires as a kind of knowledge or cognition that includes events in bodily environments. Mayer, Salovey, and Caruso (2004) stated that emotions govern and shape people's reactions to situations. They argue that types of emotions emerge in response to the evaluations of different relationship categories, especially those involving survival and reproduction. In this sense, they stated that each emotion carries different signs and emotional information. Koole (2009) defined emotions as irresistible and undeniable forces that affect the behavior of individuals. He expressed that people can control and manage their emotions with the term emotion regulation. In the same study, it was emphasized with a holistic perspective that emotion regulation is of vital importance in a person's life and that it has a positive relationship with people's mental health, performance in business life, physical health and satisfaction in their relationships (Gross, 2015; Koole, 2009).

Although Gross and Muñoz (1995) do not limit emotions to a single definition, they expressed them as biologically-based reactions of individuals to events or situations that occur throughout their lives. They stated that the emotions controlling the reactions given especially in critical and sudden situations differ with subjective experiences and can change rapidly on a minute-by-minute basis. It has been stated that emotional levels can make significant differences in controlling emotions, in this sense, they can be difficult to control and regulate, as well as helpful (Gross, 2015).

In particular, it has been stated that a person can benefit from his/her emotions in terms of focusing attention on a certain area, making sensory reception appropriate, facilitating decision-making, adjusting behavioral response patterns, and facilitating emotional communication. In this context, the competence of the individual on his emotions has an important place in terms of psychological adjustment (Gross, 2015).

Understanding competence when it comes to emotions is possible with the concept of self-efficacy. Bandura (1997; as cited in Sakız, 2013), who brought the concept of self-efficacy to the literature by referring to the concept of self-efficacy in his social cognitive theory, states that self-efficacy is the personal belief that an individual forms against herself in planning and executing her own abilities, success and skills in situations of fulfilling a task or performing a skill. Since the individual's belief that she has the necessary skills and the fact that whether she has these skills are different from each other, these skills lose their functionality when there is no belief that he can use the skills he has. Considering that individuals undertake tasks in which they have developed a belief that they can do these tasks (İnanç & Yerlikaya, 2016), in a sense, when the concept of self-efficacy is defined as a belief rather than a skill, it leads the individual to complete a specific task, and the related phenomenon indicates whether the individual will successfully complete the task or not according to the individual's perception of the subject (Bandura, 1986).

Social cognitive theory, which stands out with the concept of self-efficacy, is based on some assumptions. The first of these assumptions is the concept of indirect learning, which is defined as learning by observing the behavior of others. Latter is a model of mutual determination that is considered as interaction between environment, behaviors and personal factors of an individual which helps the person to organize his

own life. According to this model, a person is an entity that can both shape and be shaped by the environment. Therefore, in the relevant model, it is emphasized that personality development occurs when biological and environmental factors interact with the cognitive characteristics of the person. The third consists of challenging coincidental events and encounters, which are among the aforementioned environmental factors (İnanç & Yerlikaya, 2016). When the above-referred concept is considered from an individual point of view, the interests, qualities and competencies of people affect whether their chance encounter can turn into a permanent and healthy relationship. What is emphasized in the theory about random events and encounters is not that these encounters occur by chance, but that the individual can lead an active life by finding the way to benefit from these random encounters and creating their own luck. Individuals can only discover their own luck by improving themselves, evaluating the opportunities they encounter, that is, using their own personal resources (Bandura, 2001). For this reason, the most comprehensive assumption discussed in the theory is that the person has the ability to regulate his own behavior (İnanç, Yerlikaya, 2016).

Four factors affecting the self-efficacy perception of individuals have been determined (Sakız, 2013). These factors, which are also called 4 basic sources of information by Bandura (1997) are direct experiences related to success, indirect experiences based on observation, verbal persuasion and psychological / physiological states (Zimmerman, 2000). Direct experiences related to success express the individual's perception of whether he or she can handle the situation at that moment by comparing it with the same or a similar experience in the past. Bandura (1977) describes indirect experiences based on observation, which he also describes as symbolic modeling. Although it is not as effective as direct experiences, it is defined

as the development of self-efficacy perception by an individual by predicting his own success or failure for similar situations by taking the success and failure of people with similar characteristics as reference. Verbal persuasion, on the other hand, is an individual's interpretation of commentary made by people in his environment about whether he can achieve a task or not which helps a person develop a sense of self-efficacy according to positive/negative comments. It is important that the comments made are realistic, otherwise the person may develop an unrealistic self-efficacy perception. Physiological states is the situations in which the individual feels inadequate due to increased arousal level in situations where he/she experiences intense anxiety and fear, including symbolic desensitization and exposure (Bandura, 1977; Bandura, 1997). If the physiological signals given by the body reflect calmness, the belief that he can achieve the relevant task increases. However, if the physiological state creates a distressing affect on the person, the same belief level decreases.

Bandura (1977) stated that the perception of self-efficacy has an effect on four basic psychological processes: cognitive, motivational, emotional, and choice making. Cognitive processes are related to the individual's goal setting and reaching the goal he has created. Motivational processes are related to planning and performance of the person towards the goal he has created. The processes of choice making are related to the social environment established by the individual. Finally, emotional processes are related to the individual's ability to cope with negative situations, to solve the problems he encounters, and to cope with the negative attitudes of the people around him.

The concept of perceived self-efficacy directly and indirectly affects many skills related to one's self. One of these skills is self-management. In this direction, the perceived self-efficacy level of the person is highly effective on their skills when it comes to the four basic psychological processes mentioned above. In addition, self-efficacy beliefs have a direct correlation with mastery experiences, social modeling and persuasive forms of social influences (Zimmerman, 2000). However, another concept associated with the concept of self-efficacy in the related theory is self-regulation. Self-regulation skill is the ability to direct and control one's behavior by realistically evaluating his/her abilities and capacities (Bandura, 1991; Çiltaş, 2011). In this sense, it is thought that the person's self-efficacy perception directly affects self-regulation skills.

Self-efficacy beliefs play an important role in different processes of life periods, especially in self-development, adaptation to the environment and change (Bandura et al., 2003). Bandura (1995) argued that especially individuals' early family experiences have important long-term effects on self-efficacy in young adulthood. Emotional states, as mentioned, have a very important effect on the perception of self-efficacy. In addition, it is stated that triggered negative emotions reduce the perceived self-efficacy level (Bandura, Caprara, Barbaranelli, Gerbino, & Pastorelli, 2003).

Therefore, on the basis of social cognitive theory, the self-efficacy perceived by individuals in processing information about their emotions appears as an important factor in analyzing possible negative emotional states in their interpersonal relationships (Qualter et al., 2014). According to the aforementioned researchers, emotional self-efficacy is a competency that contributes to an individual's cognitive processing, comprehension and management of emotional information effectively.

Although this competence has similar characteristics with emotional intelligence, there are differences between the two concepts.

Although the quality and effect of the concept of emotional intelligence is still being researched by researchers today, Mayer and Salovey (1993), the scientists who introduced this concept for the first time state that emotional intelligence is one of the types of social intelligence that is divided into emotional and motivational intelligence (Mayer & Geher, 1996). Accordingly, related researchers have explained emotional intelligence as the ability of an individual to monitor his own or someone else's emotions, to distinguish between his own and others' emotions, and to use the information he has obtained to guide his own thoughts and actions. In the concept of emotional intelligence, which also overlaps with Gardner's type of intrapersonal intelligence, it is important that emotions can be used verbally and nonverbally, evaluated and expressed to oneself or others. Individuals with a high level of emotional intelligence are expected to be able to regulate their positive or negative emotions and use their emotions effectively to solve the problems they experience. In addition, Mayer, Salovey, and Caruso (2004) emphasized that individuals with a high level of emotional intelligence have improved academic performance, quality in their relationships, and ability to motivate themselves and others.

The place of emotional intelligence in all emotional processes is explained by four components. First is the perception of emotions, the second being using emotions in decision making and reasoning processes, third is understanding emotions and the fourth one is the management of one's feelings towards himself and others (Birknerova, Frankovsky, Zbihlajova, 2015).

Emotional intelligence is a type of intelligence that runs on emotional knowledge related to the meaning of emotions, emotional patterns, and the evaluation of relationships which reflect these terms. It also entails lifelong development, functionalization in the sense of a mental ability, and a unifying ability, which make up criteria that suggest it should be accepted as an intelligence type because it meets the items for such qualification (Mayer, Salovey, & Caruso, 2004). Goleman (1995) emphasized the importance of the concept of emotional intelligence, which is more important than mental intelligence, and that in case of lack of the relevant intelligence type then individuals' family life, professional life, success in social relations and even physical health may be negatively affected (Doğan & Şahin, 2007).

An individual's ability to understand and effectively express their emotions, to cooperate in interpersonal relations, to manage and regulate their emotions in a constructive way, to develop their skills to cope with new situations, to solve personal or interpersonal problems, to approach people and situations with optimism, to motivate themselves and to achieve their goals, being able to act towards a goal are the points where emotional and social intelligence overlap (Birknerova, Frankovsky, Zbihlejova, 2015). The point where the two concepts differ from each other is: While social intelligence is generally related to relationship management; emotional intelligence is related to emotional self-management and self-control (Birknerova, Frankovsky, Zbihlejova, 2015; Mayer, Geher, 1996; Mayer, Salovey, 1993). Therefore, while emotional intelligence (ability EI), which is defined as a cognitive ability that includes skills related to perceiving, using, comprehending and managing emotions, is determined by measurement with performance tests. Emotional self-efficacy (trait EI) is determined by self-report tests on being able to perform related skills and expresses the person's confidence in related skills (Galla & Wood, 2012).

According to Kirk et al. (2008), although emotional self-efficacy reflects the basic dimensions of ability EI, both concepts are measured in different ways. Petrides and Furnham (2003), who argue that many researchers make the mistake of examining this concept with the label of general self-efficacy while researching about emotional self-efficacy, stated that these two concepts show different characteristics from each other. The aforementioned researchers explain this situation in the same way and offer the following summary: Inventories measuring emotional intelligence and cognitive emotional ability levels are performance tests in general and do not provide information about the individual's emotional self-efficacy level. At this point, the level of emotional self-efficacy can only be measured by self-report results (inventories required by the individual's self-evaluation).

Petrides and Furnham (2001) who introduced the concept of emotional self-efficacy to the literature, explain emotional intelligence with two concepts. Firstly, they define emotional intelligence as one of the dimensions of personality and emphasize it as a personal trait, and this concept has nothing to do with the definition of intelligence conceptualized as a cognitive dimension or ability. They conceptualized this definition as emotional self-efficacy. The second concept is the concept of emotional intelligence, which is defined as a talent and based on the cognitive domain of the individual. They conceptualized this under the name of cognitive-emotional ability. Petrides, Sangareau, Furnham, and Frederickson (2006) emphasized that the concepts of emotional self-efficacy and cognitive-emotional ability are not mutually exclusive, but have divergent aspects. They state that emotional self-efficacy is the evaluation of one's abilities in their own emotional areas and then creating a perception about this assessment. Moreover, they defined cognitive-emotional ability as having abilities related to the cognitive aspect of one's

emotions (Totan, İkiz, &, Karaca, 2010). In addition, it was stated that emotional self-efficacy is a more functional concept than cognitive-emotional ability because it realistically recognizes the inner subjectivity of the individual's emotions. In later studies, it was found that the concepts of emotional self-efficacy and cognitive emotional ability had low correlations, and it was supported that these two concepts should be separated from each other and form two different structures (O'Connor, Little, 2003; Warwick, Nettelbeck, 2004).

The concept of emotional self-efficacy is considered as a multidimensional concept because it includes many sub-concepts that have broad meanings such as well-being, self-control, emotionality, and sociability (Petrides et al., 2006). In addition, there are many sub-concepts that fall into the sampling area of this concept such as adaptability, emotion regulation, emotion management, assertiveness, stress management, emotion evaluation for self and others, expressing emotions, self-motivation and relationship skills, personality traits like happiness and optimism, social competence, low level of impulsivity and self-esteem ( Petrides, Furnham, 2001).

Kirk, Schutte and Hine (2008), who argue that individuals' self-efficacy levels are an important predictor on their emotional processes, the concept of emotional self-efficacy is accepted as a sub-dimension of the concept of emotional intelligence and calling it emotional intelligence in the sense of a personality trait (Petrides & Furnham, 2001) leads to overgeneralization. They emphasize that the concept of emotional self-efficacy should be separated from the scope of the concept of emotional intelligence.

Maddux (1995), who argues that the level of emotional self-efficacy cannot be measured directly, states that emotions can be controlled only through cognition or behavior using methods such as relaxation techniques, breathing exercises, cognitive rehearsals and thought-stopping techniques. Expressing that individuals want to control their thoughts and behaviors in order to regulate their emotions, he argues that emotional self-efficacy cannot be measured directly for this reason and can be indirectly measured by techniques such as cognitive self-regulation and relaxation exercises, which are cognitive and behavioral strategies used for mood control.

It has been proven that the level of emotional self-efficacy for individuals provides predictive results for many fields such as educational, organizational and experimental psychology (Austin, 2005; Petrides, Frederickson, Furnham, 2004; Wong, Law 2002). It has been found that the concept of emotional self-efficacy, which is examined under the field of positive psychology, has a positive and significant relationship with the level of academic and professional success in individuals (Telef, Karaca, 2011), and when it is examined specifically for young adults, the psychological well-being of individuals increases as the level of self-efficacy increases. (Özer & Deniz, 2014; Totan, İkiz, &, Karaca, 2010).

### **2.3. Interpersonal Problem Solving**

The concept of a problem has been defined in different ways by many scientists. E.g: Adair (2013), who evaluated problem as a type of effective thinking skill and expressed problem as a word defining a concept which is thrown at or restricts individuals. Bingham (1998), on the other hand, defines problem as an obstacle that stands in the way of the forces that a person gathers while progressing towards reaching a goal (cited by Çam & Tümkaya, 2006). D'Zurilla and Nezu (1987)

associate problem with the person's responses to situations encountered in daily life. According to this point of view, which draws attention to the responses of people to their life situations, they call all the vital situations in their life as problems, except for the situations in which the individual being passive in the face of vital situations is adaptive. At this point, if the person gives an adaptive response to the life situation he encounters, it should not be called a problem.

From another point of view, the problem is divided into well-defined and ill-defined. Well-defined problems are those in which all aspects, initial state, strategies, goals, and solutions are clearly stated (Schraw et al., 1995). Chess is an example of a well-defined problem type. On the other hand, ill-defined problems are those that one has incomplete information about as well as finding the best solution to them is difficult and problems that the person has never encountered before. Problems encountered in daily life are given as examples of ill defined problems (Wollman, 1984). Distinctively, problem is divided into two categories as information-rich and information-poor problems. Information-rich problems can be solved by using prior knowledge. Problems that are weak in terms of knowledge can be solved with the information in the problem sentence without using prior knowledge (Eysenck & Keane, 2010). It is thought that the effects of the problems, which are generally expressed as obstacles, on people and how they are dealt with are important in that person's life.

According to Heppner and Krauskopf (1987), who accept the concepts of problem solving and coping as synonyms, problem solving is the behavioral responses exerted in order to adapt to internal / external demands or difficulties. Problem solving also includes cognitive and emotional processes towards one's relevant goal.

In this sense, people with problem-solving skills are also expected to be able to regulate their cognitive, behavioral and emotional reactions. The aforementioned researchers describe real-life problem solving as follows: They expressed it not as a rational, logical and cognitive processing of information, but as a more complex, dynamic and intermittent process that requires interaction. In this sense, instead of limiting problem solving to a set of cognitive operations aimed at one's goal (Anderson, 1980), a process that must result in effective responses (D'Zurilla & Golfried, 1971), and situational processes that continue one after another (Urban & Ford, 1971), they stated that, unlike other definitions, problem solving also includes conscious and rational activities as well as complex activities that are performed unconsciously and irrationally.

Approaching the concept of problem solving from a cognitive perspective, Anderson (2015) stated that the most important feature that distinguishes humans from other living things is their large prefrontal cortex, which supports advanced problem solving. He defined the concept of problem solving as ongoing and goal-directed behaviors by sequentially directing cognitive operations to a goal and identifying sub-goals. By drawing attention to the concept of the operator (movement), he claimed that one could develop new problem-solving operators by one can using three ways: Discovering, modeling example problem solutions, and using direct instructions. At this point, it has been stated that problem solving has three basic features: focusing on the target, creating sub-goals in order to reach the general goal, and operators taking action to reach the sub-goals. Platt, Scura, and Hannon (1973) defined the concept of problem solving as the ability to work towards successfully solving the situations encountered in life. In addition, they stated that

people who have successful problem-solving skills are more skilled in producing strategies as they progress towards achieving a specific goal in their lives.

Platt and Husband (1993), who stated that effective problem solving skills are a necessity for one's survival, stated that it would be inevitable for individuals to encounter any problem at some point in their lives. By this, they argued that people who give appropriate responses and answers to problems adapt to their lives in a more functional way. According to Eysenck and Keane (2010), there are basically three aspects of problem solving. Firstly, problem solving is a purposeful action. Secondly, problem solving is not automatic, but involves a controlled process. Thirdly, the reason for the existence of the problem is that the person does not have enough knowledge to solve the situation, and for this reason, situations that will cause problems for many people may not become a problem for those who have experience in the subject (Eysenck & Keane, 2010).

D'Zurilla and Goldfried (1971), who approached the problem solving process from a cognitive behavioral perspective, explained this process as offering solutions which they called answer alternatives, and choosing the most effective answer among the offered alternatives in order to cope with the problem. They defined the problem solving process in five-stages which includes decision making and choice behaviors. These stages consist of adaptation, problem definition and formulation, generation of alternative solutions, decision making and solution implementation and verification. In addition, they stated that individuals who do not have effective problem-solving skills experience emotional problems. Since it is stated that individuals with low problem-solving skills have cognitive rigidity, social alienation, and irrational thoughts (Bonner & Rich, 1992), it is assumed that the way a person solves the

problems he encounters in his daily life affects his whole life. In this context, the concept of social problem solving comes to the fore.

Social problem solving is conceptualized as a set of problems encountered in daily life. According to D'Zurilla et al. (2011), the concept of social problem solving is a coping strategy developed by the individual in order to adapt to his daily life. Correspondingly, related researchers define social problem solving as a general coping strategy that includes the coping reactions a person has developed for certain problems he encounters in his daily life. However, the aforementioned researchers state that the concept of social problem solving includes two different processes: Problem orientation and problem solving style. They describe the concept of problem orientation as the component of social problem solving that includes the cognitive-emotional and motivational aspects which reflect the individual's perception of the problem. They summarize the problem-solving style as the cognitive-behavioral aspect of social problem solving and the area that includes the actions in which the problems are understood and solved. Maydeu-Olivares et al. (2000) differentiate problem orientation into two categories as positive and negative problem orientation. In positive problem orientation, the person challenges the problem by developing a belief that the problem is solvable and is aware of the personal abilities necessary to solve the problem. In negative problem orientation, the person sees the problem as a threat to his psychological well-being and makes it a problem, and he does not believe that he has a personal ability to solve the problem. At the same time, Maydeu-Olivares et al. (2000) categorize problem-solving style into three different types as rational, impulsive-careless and avoidant. Rational problem solving style is a constructive dimension in which a person formulates the problem, produces alternative solutions, and uses effective problem solving skills. The impulsive-

careless problem-solving style is a dysfunctional dimension in which the person actively tries to solve the problem and usually one's attempts are careless and hasty. The avoidant problem solving style is a dysfunctional dimension in which the person delays problem solving, expects problems to be solved by itself, or wants someone else to solve the problem.

D'Zurilla and Nezu (1982) defined the concept of social problem solving as cognitive-emotional-behavioral process in which individuals try to produce effective solutions for the problems they encounter in their daily lives. They stated that using the concept of problem solving together with its 'social' adjective does not mean limiting the concept to any problem type, but that this adjective is used only to emphasize two points. The first of these points is that social problem solving is used to find solutions to real-life problems, and the second is that real-life problem solving involves a social learning process and a social skill. Social problem solving is a concept which can be applied to all areas of life. In addition, D'Zurilla and Nezu (1990) emphasized the importance of comparing process and outcome measures in social problem solving, and stated that there is a distinction between problem solving ability and problem solving performance, which are two important concepts for the social problem solving process. They defined problem solving ability as the process that enables a person to find appropriate solutions. At this point, the attitudes, beliefs and skills of the person in the problem-solving process are important. On the other hand, they defined problem solving performance as the result of solving the problem. At this point, the effectiveness of the results of the solution is important.

Every problem encountered in daily life is generally included under the heading of social problem solving, which is considered a cognitive (D'Zurilla et al., 2004) and

metacognitive (Nezu et al., 1999) skill. Success in interpersonal relationships depends on one's ability to apply verbal/nonverbal skills, social problem-solving abilities, and self-management skills accurately and on time (Corrigan et al. 1992; cited in Siu & Shek, 2009). The most common problem solving types in the subset of the concept of social problem solving are impersonal problems, personal problems, interpersonal problems, small group problems (family, friend group conflicts), and broad social problems (D'Zurilla & Nezu, 1987; D'Zurilla et al., 1990; D'Zurilla & Nezu, 1998).

Öğülmüş (2001) defined interpersonal problem as an individual feeling tension due to the discrepancy between the interaction they established at that moment and the interaction type that should be presented, and the prevention of attempts to remove said tension. (as cited in Çam & Tümkaya, 2006). Johnson & Johnson (2004) think that effective interpersonal problem and conflict resolution is related to the value that a person attaches to his/her relationship with the individuals with whom he/she has problems, and that possible solutions are accessible via the training to be given to the person concerned. They stated that with effective problem and conflict resolution training, they can produce effective solutions for problems in all areas of one's life, such as family, friends, and school. Expressing that one of the important steps in the resolution of interpersonal problems and conflicts is choosing between one of the five options suitable for the solution. They called these options integrating, forcing (competing), smoothing, avoiding and compromising. Integrating means confronting the conflict directly, competing or forcing is the pursuit of one's own interests by the desire to dominate another to compete in addressing the conflict, smoothing entails striving to fulfill the wishes of the other party by giving up one's own needs, avoiding is one person desperately avoiding the confrontation/environment in pursuit of the

other's wishes, compromising is when a party or parties give up a part of their request by seeking another solution. (Kıralp et al., 2009; Thomas, 1999).

D'Zurilla et al. (2004) defined interpersonal problem solving as a cognitive and interpersonal process aimed at finding solutions to conflicts in related relationships. In this sense, interpersonal problem solving is accepted as a subset of social problem solving related to the resolution of interpersonal conflicts (as cited by Londahl et al., 2005). What is expected from individuals in the interpersonal problem solving process is to produce new ideas, new ways and new solutions to the problem. People with advanced interpersonal problem solving skills instead of resorting to violence, fleeing and displaying aggressive behavior, they strive to solve the problem with more peaceful methods (Terzi, 2003).

Kendall and Fischler (1984), who argue that individuals with low interpersonal problem-solving skills have a cognitive deficit, argue that individuals with this skill have some common personality traits. These features include being sensitive to interpersonal problems, producing alternative solutions to problems, expressing the necessary methods in the solution process, thinking about the possible consequences of social behavior and evaluating the thoughts, behaviors and feelings of others.

Shure and Spivack (1982) state that individuals should acquire the necessary skills in order to solve their interpersonal problems more effectively. They argue that individuals who have the skills of alternative thinking, consequential thinking and mean-ends thinking can carry out the interpersonal problem solving process more healthily. These researchers define the concept of alternative thinking as being able to produce multiple alternative solutions to a problem and they express the concept of consequential thinking as seeing the possible results of the solution of the related

problem in the near future and long term, and shaping the decision accordingly. They describe the concept of means-end thinking as being able to determine the means on the way to the goal by preparing and continuing the necessary actions on the way to reaching the goal.

Interpersonal problem-solving skills are an important set of social and cognitive skills for early adulthood as well as in every developmental period of individuals. University students face various interpersonal problems due to the transition period from adolescence to adulthood (Arnett, 2000). Accordingly, Johnson and Johnson (2004), who argue that problem-solving skills and acting as a mediator in conflict resolution are important for young adults and that individuals should be educated on this subject. Johnson and Johnson (2004) stated that individuals who can find constructive solutions can maintain healthy friendships and will encounter less employment problems in their professional lives. The same researchers also stated that these individuals' success in their career journeys will be sustainable, they will be happier in their family life, and their stress levels will decrease and their happiness levels will increase as individuals. In addition to problem solving and conflict resolution, it is stated that university students who can solve problems in their bilateral relations in a healthier way have a tendency to exhibit more extroverted attitudes in their own lives, to take responsibility and to be open to new experiences, and to maintain their bilateral relations more sustainably (Cam & Alkal, 2020).

## **2.4. Related Research**

### **2.4.1. Research on Cognitive Flexibility**

In order to examine which factors shape the concept of Cognitive Flexibility and which concepts are associated with it, the relevant studies are summarized below in chronological order.

Chesebro and Martin (2003) conducted a study to investigate the extent to which conversational sensitivity is related to cognitive flexibility, as well as the extent to which sensitivity and flexibility are related to verbal aggressiveness and indirect interpersonal aggression. The first hypothesis of the study is that there is a positive and significant relationship between conversational sensitivity and cognitive flexibility. The second hypothesis is that there is a negative significant relationship between conversational sensitivity and verbal aggressiveness. The measurement tools used in the study, whose participant group consisted of 201 university students are Cognitive Flexibility Scale, Verbal Aggression Scale, Indirect Interpersonal Aggression Scale and a measurement tool developed by Daly et al. (1987) to assess conversational sensitivity. When the results were examined, the first hypothesis was supported and it was concluded that there was a positive and significant relationship between cognitive flexibility and conversational sensitivity. No evidence was found to support the second hypothesis of the study. For this reason, it is interpreted that there is no relationship between conversational sensitivity and verbal aggressiveness. At the same time, it was concluded that there is a negative significant relationship between cognitive flexibility and indirect interpersonal aggression.

A study was carried out by Akyüz (2020) in order to examine the relationship between pre-service teachers' levels of cognitive awareness, cognitive flexibility and

self-efficacy. The participants of this research, which was carried out according to the relational screening model, consisted of 595 university students studying in education faculties in Izmir. Cognitive Awareness Scale (CAS), Cognitive Flexibility Scale (CFS) and General Self-Efficacy Scale (GSE) were applied to the participants in the study. Descriptive statistics, t-test, linear regression analysis, one-way analysis of variance (ANOVA) and structural equation modeling were used to analyze the data. When the results of the study were examined, it was found that there was a positive and significant relationship between university students' cognitive awareness, cognitive flexibility and self-efficacy levels. In addition, it was concluded that university students' cognitive awareness, cognitive flexibility and self-efficacy levels were significantly affected by their frequency of reading books and their academic success.

Baki (2020) aimed to examine the mediating role of emotion regulation and mindfulness in the relationship between university students' cognitive flexibility and styles of coping with stress. The participants of the study are 100 students between the ages of 18-24 and continuing their undergraduate education. Measurement tools used in the study are Cognitive Flexibility Inventory (CFI), Wisconsin Card Sorting Test (WCST), Stroop Test Anchor Form, Stress Coping Styles Scale (SCSS), Emotion Regulation Difficulty Scale (ERDS), and Conscious Awareness Scale (CAS). As a result of the study, significant relationships were found between most of the sub-dimensions of the related variables. E.g: With stepwise multiple linear regression analysis, predictive models of optimistic approach, self-confident approach and helpless approach, which are sub-dimensions of the variables of coping with stress, were determined. In the mediating role analyses performed later, it was found that emotion regulation had a mediating role in the relationship between cognitive

flexibility and styles of coping with stress, but mindfulness did not have a mediating role.

The participant group of the research conducted by Balta (2020), in which the effects of cognitive flexibility levels of young adults on death anxiety levels and happiness levels were investigated, consists of individuals between the ages of 18-30 in the European Side of Istanbul. The scales used in this study, where data were obtained from a total of 200 people consist of Cognitive Flexibility Inventory, Death Anxiety Scale and Oxford Happiness Scale. As a result of the research, it was determined that there is a positive and significant relationship between the cognitive flexibility and happiness levels of young adults. It was determined that there was a positive and significant relationship between cognitive flexibility and death anxiety levels. No positive or negative relationship was found between happiness and death anxiety levels. When young adult individuals were evaluated in terms of their gender, it was concluded that women's cognitive flexibility and death anxiety levels were higher than men's, and men's happiness levels were higher than women's.

Wu et al. (2020) carried out a study to examine the role of emotional intelligence and cognitive flexibility in the relationship between parenting and subjective well-being, considering that emotional intelligence and cognitive flexibility mediate the relationships between various parenting strategies and the well-being of young adult individuals. In the study, the participant group consisted of 439 individuals between the ages of 18-24. The Cognitive Flexibility Scale, the Emotional Intelligence Scale, the Life Satisfaction Scale, the General Health Scale to determine whether there is a mental problem, and the two subscales of the scale developed by Yeh and Cheng (2005) to measure the extent to which adult individuals adopt the

authoritarian parenting approach of their parents were used. When the results of the study were examined, firstly, it was concluded that authoritative parenting had a positive and negative relationship with young adults' life satisfaction and a negative relationship with mental disorders, and that authoritarian parenting had a significant positive relationship with mental problems. Second, it was concluded that emotional intelligence mediates the relationship between authoritative parenting and life satisfaction of young adults. Finally, it was concluded that cognitive flexibility mediates the relationship between authoritarian and authoritative parenting and mental disorders of young adults. When all the results are examined, it is stated that the cognitive flexibility, emotional intelligence and subjective well-being of individuals with authoritative parents also show a positive development.

A study was conducted by Basut (2020) to examine the cognitive flexibility levels of university students in terms of stigma and psychological well-being. The scales used in the study consisted of 128 female and 50 male students from Çukurova University Education Faculty Guidance and Psychological Counseling Department. Cognitive Flexibility Scale, Psychological Well-Being Scale and Stigma Scale were used in the study. According to this study, a negative and significant relationship was found between the cognitive flexibility levels of young adults and their psychological well-being. In other words, it has been observed that as the cognitive flexibility levels of university students increase, their psychological well-being levels decrease. On the other hand, it was found that the stigmatization levels of young adults have a negative relationship with the level of environmental mastery, which is one of the two sub-dimensions of the psychological well-being scale, and a positive relationship with the level of personal growth, which is another dimension.

Sucu (2020) carried out a study to examine the social problem-solving skills of university students in terms of perceived parental attitudes and cognitive flexibility levels, and to determine the predictive level of the social problem-solving skills variable of the sub-dimensions of parental attitudes and cognitive flexibility scales. The data collection tools used in the study, whose participant group consisted of 574 university students are Personal Information Form, Social Problem Solving Inventory – Short Form (SPSI – SF), Parental Attitude Scale (PAS) and Cognitive Flexibility Inventory (CFI). T Test, Pearson Product Moments Correlation Analysis and Multiple Hierarchical Regression Analysis were used to analyze the collected data. When examined in terms of the gender variable, results showed that negative orientation to the problem differed significantly with democratic, protective and authoritarian parental attitudes, while protective parental attitude was not a predictor when it comes to the sum of social problem solving scores. It was determined that the predictive variables, the sub-dimensions of the Cognitive Flexibility Scale and the sub-dimensions of the Parental Attitude Scale and the Social Problem Solving Skills Scale as a whole, had a significant relationship among them. The sub-scales on which the social problem solving skill variable is predicted are alternatives and control on the cognitive flexibility scale. On the total score of the social problem solving scale, from the highest to the lowest: Alternatives, control, democratic parent attitude and authoritarian parent attitude sub-dimensions have a predictive quality. As a result, in this study, cognitive flexibility emerged as a predictor of social problem solving.

A study was conducted by Ghosh and Halder (2020) investigating emotional regulation and cognitive flexibility in young adults. This study was carried out with the idea that young adult individuals experience uncertainty while adapting to real life, entering working life and increasing responsibilities. Therefore, their decision-

making capacity is weakened. In the study, emotion regulation skill, which has an important effect on the progression of psychopathology, was defined as the ability of individuals to adjust their emotions according to situations and events. It has been stated that cognitive flexibility, which is the ability to adapt cognitive processing strategies to face unexpected conditions, can play an important role on emotional regulation ability. In this sense, the emotion regulation scale and neuropsychological tests were applied to 30 young adults aged 18-25 years. As a result of the study, a significant positive correlation was found between the level of cognitive flexibility and emotion regulation skills in young adults. Another finding obtained in the study is that a significant portion of young adult individuals use cognitive reappraisal for emotion regulation.

Idawati, Setyosari, Kuswandi, and Ulfa (2020) aimed to examine the effect of problem solving method on university students' metacognitive skills and cognitive flexibility levels. The tools used in the experimental study, conducted with 114 pre-service teachers in total, are the Cognitive Flexibility Inventory (CFI) and the Metacognitive Awareness Inventory (MAI). T Test and descriptive statistics techniques were used in the analysis of the data. In the study, the discussion method was used in the control group, and the problem-solving method was used in the experimental group. In the study, it was found that individuals with high cognitive flexibility levels had significantly higher metacognitive skill levels than individuals with low levels of cognitive flexibility. At the same time, it was seen that the metacognitive skill levels of the experimental group using the problem solving method were higher than the control group using the discussion method. In the research, which argues that various changes should be made in teaching in order to

increase the cognitive flexibility of teacher candidates, it was stated that problem solving method could be used.

A study was conducted by Smith and Konik (2021) to examine the relationship between five major personality traits, cognitive flexibility, and life satisfaction. In this study, researchers sought answers to three hypotheses. First hypothesis: “Each of the big five personality traits predicts cognitive flexibility”. Second hypothesis: “Conscientiousness, extroversion and agreeableness will predict life satisfaction positively, while neuroticism will negatively predict it”. The third hypothesis is that “Cognitive flexibility will mediate the relationship between life satisfaction and the big five personality traits”. The measurement tools used in the study, whose participant group consisted of 258 university students, 122 women and 135 men, are Mini Markers Scale, Cognitive Flexibility Scale and Life Satisfaction Scale. When the findings of the research are examined researchers found results supporting the first hypothesis. It was observed that each of the five major personality traits predicted cognitive flexibility and cognitive flexibility significantly predicted life satisfaction. In addition, the third hypothesis was supported, and it was concluded that cognitive flexibility mediated the relationship between the five major personality traits and life satisfaction.

#### **2.4.1. Research on Emotional Self-Efficacy**

Related studies are summarized below in chronological order in order to examine which factors shape the concept of Emotional Self-efficacy and which concepts it is associated with.

Two hundred and seven adult participants took part in the study conducted by Kirk, Schutte, and Hine (2008) in order to develop an emotional self-efficacy scale

based on the studies conducted in the fields of emotional intelligence and self-efficacy. In order to define the emotional intelligence domain of the scale they will create, the researchers used the four-branched emotional intelligence model (perceiving one's own and others' emotions, using emotion in decision-making and thinking processes, understanding one's own and others' emotions, managing one's own and others' emotions) of Mayer, Salovey, and Caruso (2004) and Mayer and Salovey (1997) as a reference. The internal consistency of the single-component items was calculated as .96. Test-retest reliability, which was applied at two-week intervals, was calculated as .85. As a result of all calculations, the reliability of the scale has gained certainty. In addition, as a result of the research, it was found that the level of emotional self-efficacy in individuals has a positive and significant relationship with emotional intelligence and positive emotional states.

Totan, İkiz, and Karaca (2010) devised a research in order to adapt the Emotional Self-Efficacy Scale developed by Kirk, Schutte and Hine (2008) into Turkish and to examine the psychometric properties of the scale. The participant group of the research consisted of 411 university students, 231 women and 180 men. When examined in terms of language validity, there are important relationships between the original and target forms of the scale. When examined in terms of construct validity, the scale preserves its original form, it is a stable measurement tool during internal consistency and test-retest reliability studies, and the scale has a four-dimensional structure (understanding emotions, perceiving emotions, using emotions to facilitate thinking and regulating emotions) have been reached. In the discriminant validity study, the averages of the participants showed that the sub-dimensions of regulating emotions, using emotions to facilitate thinking and emotional self-efficacy did not show significant differences in terms of gender. Finally, it was concluded that

the sub-dimensions of understanding emotions and perceiving emotions differed according to gender in favor of women.

Sánchez-Ruiz et al. (2010) conducted a study to compare university students' emotional intelligence (emotional self-efficacy) profiles, which are used as traits according to the faculties they study at. The participant group of the research consists of technical (computer, engineering departments), natural sciences (medicine, chemistry, biology departments), social sciences (psychology, sociology, education / social services departments), arts (drama, music, ballet departments) and humanities (history, philosophy, linguistics departments) constitute a total of 512 undergraduate students. The measurement tool of the research is the data set extracted from the Trait Emotional Intelligence Questionnaire (TEIQue) data archives. Four hypotheses were tried to be proven in the study. When the research findings are examined, the emotionality scores of the students studying at the faculty of social sciences are higher than those studying at the technical faculty. Students studying at the faculty of arts have higher emotionality scores than those studying at the technical faculty. Students studying at the arts faculty have a higher level of self-control skills than those studying at the technical faculty. Finally, it was concluded that there is an interaction between faculties and gender, and that women have higher scores than men only in social sciences faculty.

Dacre Pool and Qualter (2012) aimed at improving emotional intelligence and emotional self-efficacy through an instructional intervention for university students. It has been stated that emotional intelligence is an important predictor of an individual's health, psychological well-being and work-related outcomes as emotional self-efficacy, which is defined as an individual's belief in his or her emotional abilities, is

associated with having the knowledge and skills that can result in getting a job that individuals can work at after university. Accordingly, emphasizing that there is very little experimental work on teaching or developing emotional functioning ability, researchers carried out the study to find out whether it is possible to improve students' emotional intelligence and emotional self-efficacy levels with instructional intervention. The participants of the experimental study, which was carried out with the experiential learning model, consisted of a total of 134 people, 66 people in the intervention group and 68 people in the control group. The measurement tools of the study are the Emotional Self-Efficacy Scale and the Mayer-Salovey-Caruso Emotional Intelligence Scale (MSCEIT). In addition, grade point averages were used to indirectly measure students' cognitive abilities. In the study, it was concluded that when university students' knowledge and awareness about emotional self-efficacy and emotional intelligence are increased, their emotional self-efficacy levels also increase.

Nightingale et al. (2013) conducted a study to examine the adjustment of university students to school. Purpose of the study was to determine whether students' emotion management and emotional self-efficacy levels protect them against poor adjustment at the beginning of school. The aim of the study, whose participant group consisted of 331 first-year undergraduate students studying in the United Kingdom, was to examine the relationships between emotional self-efficacy, emotion management, university adjustment, and academic achievement. The measurement tools used in the research are Emotional Self-Efficacy Scale, University Adjustment Questionnaire and Situational Emotion Management Test. Researchers according to the Latent Growth Mixture Modeling (GMM) method categorized adjustment through four trajectories as (1) low, stable adjustment, (2) medium, stable adjustment, (3) high, stable adjustment and (4) low, increasing adjustment. Accordingly, it was stated

that individuals belonging to the low stable group were predicted by low emotional self-efficacy and low emotion management scores measured at entry into the university. When the university entrance scores of the students in this group were examined, it was determined that they had low academic achievement. On the other hand, it has been found that students who increased in adjustment have high levels of emotional self-efficacy and emotion management skills.

Beri and Jain (2016) carried out a study to explore the personal growth initiative, emotional self-efficacy and general well-being of undergraduate students and to examine the relationship between these three variables. Personal growth initiative was defined by researchers as the development and growth orientation of individuals in their living spaces, including meta-cognition, awareness and planned commitment structures, emotional self-efficacy. They conceptualized it as a process in which individuals can recognize, make sense of and define their emotions. In addition, the general well-being variable, which has many layers, is expressed as the ability of individuals to reach a dynamic balance between different aspects of their lives. 480 university students, who are the participants of this descriptive study, were selected by stratified random sampling method. The measurement tools used in the research are as follows: The Personal Development Initiative Scale-II, Emotional Self-Efficacy Scale and the General Well-Being Scale developed by the researchers. When the results of the study, in which parametric statistical analysis methods were used, were evaluated according to the gender variable results showed that women's personal growth initiative, emotional self-efficacy and general well-being levels were higher than men's. When the findings were analyzed according to the departments of the students, it was concluded that the personal growth initiative, emotional self-efficacy and general well-being levels of the students studying in the field of science

were higher than those studying in the fields of arts and commerce. As a result, a positive and significant relationship was found between personal growth initiative, emotional self-efficacy and general well-being.

Aydogdu, Celik, and Eksi (2017) conducted a study to determine whether emotional self-efficacy and interpersonal sensitivity characteristics have an impact on the psychological resilience of young adults and to examine the degree of this power, if any. Simultaneous Multiple Regression analysis was applied by using the relational screening model in the study, whose participants were 243 female and 88 male, totally 331 university students. Data collection tools used in the research are as follows: Resilience Scale for Adults, Emotional Self-Efficacy Scale and Interpersonal Sensitivity Measure. When the findings of the study were examined, it was concluded that the variables of emotional self-efficacy and interpersonal sensitivity explained 34% of the total variance of the psychological resilience variable. When the psychological resilience sub-dimensions are examined, the sub-dimensions of using emotions to facilitate thinking and understanding emotions made up 14% of the total variance of perception of the future. The need for approval and perceiving emotions contributed to 8% of the variance in family cohesion. Using emotions to assist thought sub-dimension solely predicted 27% of the variance in social competence. Furthermore, it was concluded that 20% of the variance in social resources was significantly predicted by perceiving emotions in the self and others. As a result of the findings, it was stated that the emotional self-efficacy and interpersonal sensitivity levels of young adults had significant effects on their resilience.

A study was carried out by Çatal (2019) to investigate the conflict action styles of teacher candidates according to their emotional self-efficacy levels. The sub-

objectives of the research are to determine whether the conflict action styles and emotional self-efficacy levels of university students differ according to their gender, grade levels and departments. The data collection tools used in the study, in which the number of participants was determined as 300 university students consisting of 217 women and 83 men, were Emotional Self-Efficacy Scale (SCES) and Conflict Action Styles Scale (SPES). Independent Two-Sample T-Test and One-Way ANOVA analysis methods were used in the study, a significance level of 0.5 was used to determine the significance level of the findings. While Pearson Correlation technique was used for correlation analysis, regression analysis was performed between variables in order to determine how emotional self-efficacy predicts conflict action styles. According to the analyses, there is a significant relationship between emotional self-efficacy and conflict action styles, and the emotion regulation sub-dimension has been determined to have a positive and significant relationship with coercive, facilitating, conciliatory and antagonistic conflict action styles. According to multiple regression analysis, it was found that emotional self-efficacy sub-dimensions explained 7% of the change in the coercive conflict action style, 17% of the change in the facilitating conflict action style, 15% of the change in the conciliatory conflict action style, and 15% of the change in the antagonistic conflict style of action.

Çutuk (2019) aimed to investigate the relationship between university students' emotional self-efficacy levels and their levels of resilience to distress. In the study, researchers aimed to examine the relationship of the emotional self-efficacy variable with the variables of gender, parental attitude, number of siblings, socio-economic level, and the duration to endure adversity. The participants of the study, in which the relational screening method was used, consisted of 390 university students, 287 women and 103 men. T Test, One-Way Analysis of Variance, Pearson Product

Moments Correlation Coefficient and Simple Linear Regression Analysis were used in the study in which Emotional Self-Efficacy Scale and Distress Endurance Scale were used as data collection tools. According to the research findings, there is no effect of gender, number of siblings, parental attitude, socio-economic level on individuals' emotional self-efficacy levels. Moreover, there is a positive significant relationship between individuals' emotional self-efficacy levels and their levels of resilience to distress, and that individuals' levels of distress tolerance have no effect on their emotional self-efficacy levels. In conclusion, participants' endurance to stress predicted their emotional self-efficacy levels significantly.

Gök (2020) conducted a study to examine the relationship between high school students' emotional self-efficacy levels and their problem-solving skills. The participants of the study consisted of 394 high school students determined by the stratified sampling method. Problem Solving Skills Inventory and Emotional Self-Efficacy Scale constitute the data collection tools of the study, which was carried out with the Relational Screening Model method. The analysis methods used in the research are Independent Groups T-Test, Manan Whitney U Test, Kruskal Wallis H Test, One-Way Analysis of Variance and Pearson Correlation Analysis. According to the results of the research, no significant relationship was found between high school students' problem solving skills and emotional self-efficacy levels. When the research findings are analyzed according to demographic variables, variables such as gender, irritability, frequency of consulting someone when there is an unsolvable problem, and being liked among friends are important. Responses to three demographic variables, excluding gender, are often, sometimes, and rarely. According to the results, it was concluded that problem solving skills were higher in males compared to females. When problem solving skills were examined according to the variable of

irritability, it was concluded that it was at a higher level in those who rarely got angry. When the problem-solving skills were examined according to the demographic variable, it was concluded that the frequency of consulting someone in an unsolvable situation was higher in the clients who rarely got angry. When emotional self-efficacy levels were examined according to the demographic variable of being loved among friends, it was concluded that it was often higher in loved ones. When the emotional self-efficacy levels are examined according to the demographic variable of the frequency of consulting someone when there is an unsolved problem, it has been concluded that clients who consult another person sometimes and most of the time, have a higher level of emotional self-efficacy.

#### **2.4.3. Research on Interpersonal Problem Solving**

In order to examine which factors form the concept of interpersonal problem solving and which concepts it is associated with, the relevant studies are summarized below in chronological order. In studies conducted abroad, it has been seen that the concept of interpersonal problem solving is defined as social problem.

The aim of the two-stage study carried out by D'Zurilla and Sheedy (1991) is to investigate the relationship between university students' social problem-solving abilities and their psychological stress levels. The participant group consists of 127 university students, 50 male and 77 female. The measurement tools used in the research are Degoratis Stress Profile (DSP), Social Problem Solving Inventory (SPSI) and Personal Problems Checklist (PPC). Instead of detecting existing clinical disorders, Degoratis Stress Profile (DSP) is used to evaluate the possibility of encountering one in the future, Social Problem Solving Inventory (SPSI) is equipped to measure the problem orientation and problem-solving skills of the participants, and

Personal Problems Checklist is chosen to evaluate the problems encountered in daily life instead of evaluating a clinical disorder. Evaluation was carried out at two different times during the study process. First of all, PPC and SPSI were applied to the participants in the first semester of the academic year, DSP was also applied to measure the stress levels of the students. Three months later, before the final exams, the stress levels were measured by applying DSP to the participants again. According to the hierarchical multiple regression analysis results, it was concluded that general problem solving ability has a negative and significant relationship with the stress level in the first stage and the stress level in the second stage. However, it has been observed that problem orientation is a better predictor of stress than problem solving skills.

D'Zurilla et al. (1998) conducted a study to examine the differences between age and gender in social problem solving skills. The participant group of the research consisted of 904 university students, 499 women and 405 men in the age range of 17-20, a total of 100 middle-aged individuals, 70 women and 30 men, between the ages of 40-50, and 70 women and 30 men in the 60-80 age range. The participant group consists of 100 elderly individuals in total. The data collection tool used in the study is the Revised Social Problem Solving Inventory (SPSI-R). When the results were examined, it was determined that middle-aged people were at a higher level in the sub-dimensions of positive problem orientation and rational problem solving, while they were at a lower level in the sub-dimensions of negative problem orientation, impulsivity / carelessness style and avoidance style compared to young adults. It has been determined that middle-aged individuals have higher levels of positive problem orientation and rational problem-solving skills compared to elderly individuals. There were gender differences in positive problem orientation and negative problem

orientation between age groups. When evaluated specifically for young adults, it was concluded that the impulsivity / carelessness sub-dimensions differed according to gender, and women scored lower in this sub-dimension than men.

Londahl et al. (2005) investigated the relationship between university students' internalizing symptoms in close relationships and interpersonal conflict and interpersonal problem solving. They defined the internalization symptoms variable in their study, which consisted of 123 university students, 71 female and 52 male, as depression and anxiety symptoms. The conflict variable was examined in five different close relationships: best friend, second best friend, romantic partner, mother and father. They considered interpersonal problem solving skills in five different dimensions: Positive and negative problem orientation, rational problem solving, impulsivity / carelessness style, and avoidance style. The data collection tools used in the study are the Interpersonal Conflict Questionnaire (ICQ), the Social Problem Solving Inventory (SPSI-R:I), which has been revised with its interpersonal aspect, the Beck Depression Inventory (BDI), and the Beck Anxiety Inventory (BAI). As a result of the regression analysis, it was concluded that negative problem orientation predicted depression and accounted for conflicts with mother and romantic partner. It was concluded that avoidance style predicted depression only by maternal conflict. It was concluded that negative problem orientation is an important moderator in the relationship between romantic partner conflicts and anxiety symptoms. Finally, it was concluded that when negative problem orientation is high, the relationship between conflicts and anxiety symptoms is also strong.

A research was carried out by Çam and Tümkaya (2006) in which the relationship between university students' interpersonal problem-solving approaches

and skills and variables of gender, age and field of study were investigated. The participant group of this descriptive study consists of 623 undergraduate and graduate students, 308 women and 315 men. The data collection tools used in the study were the Interpersonal Problem Solving Inventory (IPSI) developed by the researchers themselves. When the research results are examined in terms of gender variable, it was concluded that constructive problem solving and unwilling to take responsibility sub-dimensions did not make a significant difference according to gender. On the other hand, negative approach to the problem and insistent-persevering approach sub-dimension average values were higher in women, while the average value of self-confidence sub-dimension was higher in men. When examined in terms of the age variable, constructive problem solving sub-dimension scores were higher in the 22-30 age group than in the 18-26 age group. It was determined that the sub-dimension of unwilling to take responsibility was higher in the 18-26 age group than in the 22-30 age group. Finally, when the scores of the students from the related scale were examined in terms of their fields of study, it was concluded that there was no significant difference between the averages of any sub-dimension of the students studying in Science, Technical Sciences and Social Sciences fields.

D'Zurilla et al. (2011) conducted a study to predict social problem-solving skills of university students by using their personality traits. The data collection tools used in the study, which the participant group consisted of a total of 650 university students, 104 men and 541 women, are the Revised Social Problem Solving Inventory (SPSI-R), the Revised Eysenck Personality Inventory (EPQ-R), the NEO Five Factor Inventory (NEO-FFI), and the Positive and Negative Affect Scale (PANAS). The researchers measured participants' social problem-solving skills with the Revised Social Problem-Solving Inventory, which measures five different dimensions of

problem-solving ability. As a result of multiple regression analyses, it was concluded that neuroticism was a strong predictor of problem solving variable only for negative problem orientation sub-dimension, whereas conscientiousness was the most consistent predictor of all five dimensions. However, in the related research, it was concluded that conscientiousness, openness and positive affect predicted higher level of problem solving ability, whereas neuroticism predicted lower level of problem solving ability. Finally, as a result of regression analysis, it was found that personality and affect predicted 58% of the variance in negative problem orientation and 32% of the variance in rational problem solving.

Erozkan (2013) carried out a quantitative and relational study in order to investigate the relationship between adolescents' communication skills, interpersonal problem-solving skills and perceived social self-efficacy, and to investigate the predictors of communication skills and interpersonal problem-solving skills on adolescents' social self-efficacy perceptions. The sample group consists of a total of 494 students, 226 women and 268 men, who are randomly selected from different high schools. The data collection tools used in the research are Communication Skills Inventory (CSI), Interpersonal Problem Solving Inventory (IPSI), and Social Self-Efficacy Expectation Scale for Adolescents (SSES-A). Pearson Product Moment Correlation Analysis was used to examine the relationship between communication skills, interpersonal problem solving skills and social self-efficacy and multiple hierarchical regression analysis was used for explaining social self-efficacy. The results demonstrated that the communication skills and interpersonal problem solving skills significantly correlated to social self-efficacy and communication skills. Consequently, interpersonal problem solving skills were found to have a significant predictive effect on social self-efficacy.

Koç, Terzi, and Gül (2015) conducted a study to examine the relationship between university students' communication skills and interpersonal problem-solving skills, age, gender, and the variables of being exposed to violence in the family, and the relationship between interpersonal problem-solving skills and communication skills. The measurement tools used in the study, which consisted of a total of 444 university students, 257 female and 187 male, were the Interpersonal Problem Solving Inventory (IPSI) and the Communication Skills Assessment Scale (CSAS). In the analysis of the data, independent groups t test, Pearson Correlation Analysis and Multiple Linear Regression Analysis were used. When the results were analyzed in terms of the age variable, no significant difference was found between the ages of the participants and their interpersonal problem solving and communication skills. When examined according to the variable of whether or not they have been exposed to violence in the family, it was concluded that interpersonal problem-solving skills did not differ significantly according to the relevant variable, but the communication skills scores of the participants who did not experience violence in the family were higher than those who experienced violence in the family. When examined in terms of gender variable, it was concluded that self-confidence, which is a sub-dimension of interpersonal problem-solving skills, was higher in male participants, and communication skills in female participants. In general, it was concluded that the variable of communication skills significantly predicted the negative approach to the problem and self-confidence, which are sub-dimensions of interpersonal problem-solving skills, and positively with the constructive problem-solving and insistent-persevering approach sub-dimensions.

Dehaghani and Yousefi (2016) aimed at investigating the role of social problem solving in the relationship between self-efficacy types (emotional / creative /

perceived social self-efficacy) and anger. The measurement tools used in the study, whose participant group consisted of 228 female and 162 male, total 390 university students, were Social Problem Solving Inventory (SPSI), Emotional Self-Efficacy Scale (ESES), Creative Self-Efficacy Scale (CSES), Perceived Social Self-Efficacy Scale (PSES) and the State and Trait Anger Expression Inventory. The path analysis performed concluded that all types of self-efficacy were a significant predictor of constructive problem solving however only creative self-efficacy predicted non-constructive problem solving significantly. It has been found that all sub-dimensions of social problem solving significantly predict anger and social problem solving has a mediating role in the relationship between self-efficacy types and anger.

Aygun (2018) carried out a study to examine the cognitive flexibility of pre-service teachers' cognitive flexibility in terms of specific variables and determine the relationship between pre-service teachers' cognitive flexibility and interpersonal problem solving skills. The participant group of the study, which was conducted in the form of a descriptive correlational design, consists of a total of 531 university students, 308 women and 223 men. The measurement tools used in the study include Cognitive Flexibility Inventory (CFI) and Interpersonal Problem Solving Inventory (IPSI). When the results of the research are examined in terms of gender variable, the cognitive flexibility levels of female students are higher than that of men, and when examined according to the parent education level variable, there is no relationship between the father's education level and the student's cognitive flexibility, and the mother's education level is positively correlated with the student's cognitive flexibility level. On the other hand, it was concluded that the cognitive flexibility levels of the participants did not show any difference according to their class levels, departments, socio-economic and socio-cultural levels. Finally, it was found that there was a weak

positive correlation between the cognitive flexibility levels of the participants and their interpersonal problem-solving skills.

Sarikaya (2019) conducted a study to examine the relationship between high school students' interpersonal problem-solving skills, self compassion and cognitive flexibility levels, and find out whether interpersonal problem-solving skills is predicted by self compassion and cognitive flexibility. The participant group of the study, which was carried out with the relational screening model, consists of a total of 403 students, 191 women and 212 men. The data collection tools used in the research are the Interpersonal Problem Solving Inventory (IPSI), the Self-Compassion Scale (SCS), and the Cognitive Flexibility Scale (CFS). Independent t-test, Pearson product-moment correlation, multiplying correlation and gradual regression analysis techniques were used in the study. When the relationships between variables and their sub-dimensions are examined, researchers found that there is a significant positive relationship between cognitive flexibility, self compassion and constructive problem solving, insistent patient approach which are sub-dimensions of interpersonal problem solving. Moreover, results show that there is a significant negative relationship between negative approach to problem, lack of self-confidence and not taking responsibility. According to the results of the gradual regression analysis, in the first stage, the self compassion variable and in the second stage, the cognitive flexibility variable predicted the interpersonal problem solving scores.

## **CHAPTER 3: METHOD**

### **3.1. Model of the Research**

Since this research aims to examine the relationship between cognitive flexibility, emotional self-efficacy and interpersonal problem-solving skills of a group of university students, it is an exploratory correlational research model, which is one of the quantitative research models. Correlational studies are aimed at investigating the cause-effect relationship between at least two variables. The mentioned studies are of two types: exploratory and predictive. The aim of exploratory correlational research is to analyze and understand the relationship between two or more variables. The purpose of predictive correlational studies is to examine the relationship between variables, while trying to predict the other one by starting from one of the variables. While performing the predictive process, an unknown value of the other variable is estimated based on a known value of one variable (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2016). Since the main purpose of the current study is to understand whether there is a relationship between university students' cognitive flexibility, emotional self-efficacy and interpersonal problem-solving skills, the current research is an exploratory correlational research model.

### **3.2. Universe and Sample**

The population of this research consists of university students studying at the undergraduate level in Istanbul in 2020-2021.

The sample of the study was determined by convenient sampling and criterion sampling methods, which are among the non-random sampling methods. Convenient

sampling method provides convenience to the researcher by preventing loss of time, money and labor, and makes it possible to collect data from a sample that the researcher can easily reach. On the other hand, the criterion sampling method is the creation of the sample from people, events, objects or situations with the qualifications determined by the researcher in relation to the problem (Büyüköztürk et al., 2016). The criteria used in the research was determined to be the fact that the participants were university students and between the ages of 18-26.

In this context, the sample of the research consists of university students who continue their education at Yeditepe University in 2020-2021 and who are studying in various faculties in the fields such as Social Sciences, Science and Health Sciences.

Table 1

*Demographic Information of the Participants*

| Variables                      |                   | n   | %      |
|--------------------------------|-------------------|-----|--------|
| Age                            | 18-20             | 142 | 34.10  |
|                                | 21-22             | 146 | 35.10  |
|                                | 23 and older      | 128 | 30.80  |
| Gender                         | Female            | 302 | 72.60  |
|                                | Male              | 114 | 27.40  |
| Grade level                    | First grade       | 107 | 25.70  |
|                                | Second grade      | 66  | 15.90  |
|                                | Third grade       | 102 | 24.50  |
|                                | Fourth grade      | 122 | 29.30  |
|                                | Fifth grade       | 10  | 2.40   |
|                                | Sixth grade       | 9   | 2.20   |
| Program types                  | Social Sciences   | 257 | 61.80  |
|                                | Science           | 129 | 31.00  |
|                                | Health Sciences   | 30  | 7.20   |
| Education status of the father | Illiterate        | 4   | 1.00   |
|                                | Primary education | 106 | 25.50  |
|                                | High school       | 116 | 27.90  |
|                                | Bachelor's degree | 155 | 37.30  |
|                                | Graduate          | 25  | 6.00   |
|                                | PhD graduate      | 10  | 2.40   |
| Education status of the mother | Illiterate        | 7   | 1.70   |
|                                | Primary education | 109 | 26.20  |
|                                | High school       | 148 | 35.60  |
|                                | Bachelor's degree | 138 | 33.20  |
|                                | Graduate          | 8   | 1.90   |
|                                | PhD graduate      | 6   | 1.40   |
|                                | Total             | 416 | 100.00 |

In Table 1, 416 undergraduates participated in the research according to the descriptive statistics of the demographic variables. 72.60% of the participants (n = 302) were female and 27.40% of them (n = 114) were male undergraduates.

In terms of age distribution in the sample, 142 (34.10%) of the participants were between 18 and 22 years old, 146 (35.10%) were between 21 and 22 years old and 128 (30.80%) were between 23 and above years old.

25.70% of the participants ( $n = 107$ ) were in the first-grade students, 15.90% of the participants ( $n = 66$ ) were in the second-grade students, 24.50% of the participants ( $n = 102$ ) were in the third-grade students, 29.30% of the participants ( $n = 122$ ) were in the fourth-grade students, 2.40% of the participants ( $n = 10$ ) were in fifth-grade students, and 2.20% of them ( $n = 9$ ) were in the sixth-grade students.

61.80% of the participants ( $n = 257$ ) study in social sciences, 31.00% of the participants ( $n = 129$ ) study in sciences, and 7.20% of them ( $n = 30$ ) study in health sciences.

With regard to educational levels of the fathers of the participants, 4 of them (1.00%) were illiterate, 106 of them (25.50%) were in primary school level, 116 of them (27.90%) were in high school level 155 of them (37.30%) were in bachelor's degree, 25 of them (6.00%) were graduated and, 10 of them (2.40%) were in PhD level

With regard to educational levels of the mothers of the participants, 7 of them (1.70%) were illiterate, 109 of them (26.20%) were in primary school level, 148 of them (35.60%) were in high school level 138 of them (33.20%) were in bachelor's degree, 8 of them (1.90%) were graduated and, 6 of them (1.40%) were in PhD level

### **3.3. Data Collection Tools**

Four tools were used for data collection on the sample of the study. These tools are Personal Information Form, Cognitive Flexibility Inventory, Emotional Self-Efficacy Scale and Interpersonal Problem Solving Inventory.

### **3.3.1. Personal Information Form**

The Personal Information Form (Annex-A) developed by the researcher was applied in order to determine the personal information and characteristics of the participants that will contribute to the research. In this form, closed-ended questions with 3 options to determine the gender of the participants, open-ended questions to determine their age, closed-ended questions with 6 options to determine their grade level, open-ended questions to determine the program types of education, closed-ended questions with 6 options to determine the educational status of the mother and to determine the educational status of the father were used. A total of 6 demographic questions are asked, including 6 closed-ended questions with 6 options.

### **3.3.2. Cognitive Flexibility Inventory**

The original version of the scale is called the Cognitive Flexibility Inventory (CFI). The purpose of the 20-item scale, which was developed by Dennis and Wall in 2009, in a seven-point Likert type (1: strongly disagree, 7: strongly agree), is to measure the cognitive flexibility of individuals through self-assessment. Another purpose of the scale is to measure three aspects of cognitive flexibility which are being aware of alternative solutions against circumstances, being flexible against new circumstances and feeling himself/herself competent in such circumstances. The scale was being developed as part of a longitudinal study conducted seven weeks apart with 196 undergraduate students. The Chronbach's alpha was measured as .90 for the first time and .91 for the second time (Dennis & Wal, 2009). It is possible to obtain a total score from the scale. (Kurginyan & Osavolyuk, 2018).

The Turkish adaptation of the scale was completed in 2013 by Dr. Fatma Sapmaz and Assoc. Prof. Tayfun Doğan. The participants of the research are 551

university students continuing their education at Sakarya University and Hacettepe University. The scale consists of 20 items with two sub-dimensions, alternatives (13 items) and control (7 items). Reverse coded items in the scale are: 2, 4, 7, 9, 11, 17. This scale, which was created to measure the cognitive flexibility of individuals against the events and situations in their lives, is of five-point Likert type (5: Not at all appropriate, 1: Completely appropriate), and it was determined that it could be applied to university students. A total score is obtained from the scale, and it is stated that individuals who score high on the relevant scale have high cognitive flexibility, that is, they are optimistic individuals who can make their own decisions in a healthy way, have high self-esteem, bring alternative perspectives to events and situations. The Cronbach's alpha reliability coefficient of the scale was calculated as .90 for the whole, .90 for the alternatives sub-dimension, and .84 for the control sub-dimension. Likewise, the test-retest reliability coefficient was determined as .75 for the whole scale, .78 for the alternatives sub-dimension, and .73 for the control sub-dimension (Sapmaz & Doğan, 2013). For this study, the Cronbach's alpha coefficient of the relevant inventory was calculated as .87.

### **3.3.3. Emotional Self-Efficacy Scale**

The name of the original version of the scale is “Emotional Self-Efficacy Scale (ESES)”. It was developed by Kirk, Shutte and Hine in 2008. The scale is a five-point Likert type measurement tool consisting of 32 items in its original form. The scale has four factors. These are perceiving emotions in self and others (Perceive), using emotions to assist thought (Assist), understanding emotions and emotional knowledge in the self and others (Understand), and regulating emotions in the self and others (Regulate) (Cited by Totan, İkiz & Karaca, 2010). In the research created to develop

the scale, the sample was formed by 207 Australian adults (125 females, 74 males and 8 who did not want to specify their gender) between the ages of 18-72. As a result of the reliability studies, the researchers reported the Cronbach's alpha coefficient of the scale as .96, while the correlation coefficient of the test-retest application performed on 27 participants at two-week intervals was .85 ( $p < .0001$ ).

The Turkish adaptation of the Emotional Self-Efficacy Scale was carried out in 2010 by RA Tarik Totan, Prof. Ebru Ikiz and Prof. Dr. Renkin Karaca. This scale which will be used in the current study consist of 32 items and is a five-point Likert type measurement tool. The participants of the study consisted of 411 university students continuing their education at Dokuz Eylul University, Buca Faculty of Education. The concept of emotional self-efficacy in the scale was defined as the perceived abilities of self that can be associated with emotion, the evaluation of these abilities, and the development of a related belief. The relationship between the original form of the scale and the total scores of the translation form was determined as .84 ( $p < .01$ ). As a result of the exploratory factor analysis in the original form of the scale, it was seen that the scale had one factor and four dimensions as a result of the confirmatory factor analysis. The sub-dimensions of the scale are perception of emotions, using emotions to facilitate thinking, understanding emotions and regulating emotions. These four sub-dimensions constitute a higher level dimension. The Cronbach's alpha coefficient for the whole scale was .93, the internal consistency coefficients of the sub-dimensions were .70 for the Emotion Regulation sub-dimension, .80 for the Using Emotions to Facilitate Thinking sub-dimension, .83 for the Understanding Emotions sub-dimension, and .77 for the Perception of Emotions sub-dimension, respectively. The scale was accepted as a reliable tool because all of the internal consistency coefficients were above .70. In the test-retest reliability study

conducted with 78 university students who were educated at Dokuz Eylül University in the period of 2009-2010, .62 for the total scale, .68 for the dimension of regulation of emotions, .71 for the dimension of the using emotions to facilitate thinking, and .71 for the dimension of understanding emotions. The correlation coefficient was determined as .67 and .65 for the perception of emotions dimension (Totan et al., 2010). For this study, the Cronbach's alpha coefficient of the related scale was found to be .87.

#### **3.3.4. Interpersonal Problem Solving Inventory**

The inventory, which is in the form of self-evaluation, was prepared by Dr. Lecturer Sabahattin Çam and Prof. Dr. Songül Tümkaya at Çukurova University. The sample of the study consisted of 526 undergraduate and graduate students continuing their education at the university. The five-point Likert-type inventory consisting of 50 items and five different sub-scales. These sub-scales are approaching problems in a negative way, constructive problem solving, lack of self-confidence, unwilling to take responsibility and insistent-persevering approach. It has been determined that the inventory is applicable to university students between the ages of 18-30. While the Cronbach's alpha internal consistency values of the subscales were between .67 and .91, it was stated that the test-retest stability coefficients varied between .69 and .89. It was also stated that the scores obtained from the four subscales except Self-Confidence had appropriate reliability values. While developing the scale, the Problem Solving Inventory developed by Heppner and Petersen and the Social Problem Solving Inventory developed by D'Zurilla and Nezu were examined. It was found that the related inventory did not give a total score (Çam & Tümkaya, 2007). For this research, the Cronbach Alpha coefficient of the sub-dimensions of the

inventory is as follows: .88 for constructive problem solving, .93 for approaching problems in a negative way, .87 for lack of self-confidence, .79 for unwilling to take responsibility, and .72 for insistent-persevering approach.

### **3.4. Data Collection**

In accordance with appropriate and criterion sampling, the ethics committee gave permission to collect the relevant data within Yeditepe University and the relevant data collection permission (See Appendix E) was obtained. Due to the pandemic conditions, the data collection process was carried out on the online platform (Google Forms). Accordingly, Informed Consent Form, Personal Information Form, Cognitive Flexibility Inventory, Emotional Self-Efficacy Scale and Interpersonal Problem Solving Inventory were uploaded to the Google Forms online platform and a link was created to be shared with the participants. In order to reach the participants between March 2021 and June 2021, the link of the aforementioned form was shared in the relevant courses, after obtaining the necessary permissions from the lecturers in the relevant term and submitting the approval of the ethics committee. The participants joined the relevant study on a voluntary basis, and the average time for completing the aforementioned forms was determined as 30 minutes.

### **3.5. Data Analysis**

In this study, the structural relationships between the related variables were tested to explain the relationship between cognitive flexibility, emotional self-efficacy and interpersonal problem solving variables. Before analyzing whether there is a relationship between the variables, missing values and extreme values in the relevant data set were investigated in order to prepare the data set for analysis. According to

this, no missing values and extreme values were found in the data set. Assumption of normality tests were performed to understand whether the data were normally distributed. For this purpose, the kurtosis and skewness coefficients were calculated. Since the values did not go out of the range (-1,5, +1,5), the distribution was accepted as normal distribution (Genceli, 2007; Tabachnick, & Fidell, 2013). The 25.0 version of the SPSS (Statistical Package for Social Sciences) computer program was used. Since the data in the sub-objectives had normal distribution, parametric analyzes were applied instead of non-parametric analyzes.

According to these:

- a) Descriptive statistics (mean, standard deviation, etc.) were used to understand the level of cognitive flexibility, emotional self-efficacy and interpersonal problem-solving skills of university students.
- b) Is there a significant relationship between university students' cognitive flexibility levels, emotional self-efficacy levels and interpersonal problem-solving skills? Pearson Correlation Analysis was applied to answer the question.
- c) Do university students' cognitive flexibility levels differ significantly by gender? Independent sample t-test was used to test this sub-objective.
- d) Does the cognitive flexibility level of university students show a significant difference according to their age? One-way ANOVA was applied to test this sub-objective.
- e) Do university students' cognitive flexibility levels differ significantly according to their grade levels? One-way ANOVA was applied to test this sub-objective since the data had a normal distribution.

- f) Do university students' cognitive flexibility levels differ significantly according to their program types? One-way ANOVA was applied to test this sub-objective.
- g) Do university students' cognitive flexibility levels differ significantly according to their mothers' education levels? One-way ANOVA was applied to test this sub-objective.
- h) Do university students' cognitive flexibility levels differ significantly according to their fathers' education levels? One-way ANOVA was applied to test this sub-objective.
- i) Do university students' emotional self-efficacy levels differ significantly by gender? Independent sample t-test was used to test this sub-objective.
- j) Do university students' emotional self-efficacy levels differ significantly according to their age? One-way ANOVA was applied to test this sub-objective.
- k) Do university students' emotional self-efficacy levels differ significantly according to their grade levels? One-way ANOVA was applied to test this sub-objective.
- l) Do university students' emotional self-efficacy levels differ significantly according to their program types? One-way ANOVA was applied to test this sub-objective.
- m) Do university students' emotional self-efficacy levels differ significantly according to their mothers' education levels? One-way ANOVA was applied to test this sub-objective.

- n) Do university students' emotional self-efficacy levels differ significantly according to their fathers' education levels? One-way ANOVA was applied to test this sub-objective.
- o) Do university students' interpersonal problem-solving skills differ significantly by gender? In order to test this sub-objective, the independent sample t-test was applied.
- p) Do university students' interpersonal problem-solving skills show a significant difference according to age? One-way ANOVA was applied to test this sub-objective.
- q) Do university students' interpersonal problem solving skills show a significant difference according to their grade levels? One-way ANOVA was applied to test this sub-objective.
- r) Do university students' interpersonal problem-solving skills differ significantly according to their program types? One-way ANOVA was applied to test this sub-objective.
- s) Do university students' interpersonal problem-solving skills show a significant difference according to their mothers' education levels? One-way ANOVA was applied to test this sub-objective.
- t) Do university students' interpersonal problem-solving skills differ significantly according to their fathers' educational status? One-way ANOVA was applied to test this sub-objective.

## CHAPTER 4: FINDINGS

Before proceeding to the analysis of the research, the preliminary analyses were conducted. In these analyses, the multivariate normality, the identification of missing data and outliers, and the descriptive data were investigated. After the preliminary analyses, the main analyses regarding the research problem and its sub-problems were made.

### 4.1. Preliminary Analyses

To examine whether the data included the missing data, or not, all responses obtained from the participants were analyzed profoundly. As they answered all questions given to them via the scales, there were no missing values in the data. After that, the potentiality of outliers was tested through Mahalanobis distance calculation. As the data indicated no outliers, the descriptive statistics regarding the study variables, and the normality analyses based on the skewness and kurtosis coefficients of the study variables were examined.

Table 2

*Descriptive Statistics and The Normality Indexes Regarding Cognitive Flexibility, Emotional Self-efficacy, and Interpersonal Problem-Solving Skills*

| Variables                                     | N   | Mean   | SD    | Skewness | Kurtosis |
|-----------------------------------------------|-----|--------|-------|----------|----------|
| Cognitive Flexibility (CF)                    | 415 | 79.29  | 10.29 | -.352    | -.073    |
| Emotional Self-efficacy (ESE)                 | 416 | 117.46 | 14.41 | -.387    | .845     |
| Interpersonal Problem-Solving Skills (IPSS)   |     |        |       |          |          |
| Constructive Problem Solving (CPS)            | 416 | 63.62  | 9.41  | -.397    | .044     |
| Approaching Problems in a Negative Way (APNW) | 416 | 49.59  | 15.17 | .012     | -.819    |
| Lack of Self-Confidence (LSC)                 | 416 | 16.47  | 6.64  | .889     | .254     |
| Unwilling to Take Responsibility (UTR)        | 416 | 13.77  | 4.73  | .280     | -.493    |
| Insistent-Persevering Approach (IPA)          | 416 | 23.35  | 4.29  | -.530    | .009     |

Note. Cognitive flexibility: CF, Emotional self-efficacy: ESE, Interpersonal problem-solving skills: IPSS, Constructive problem-solving: CPS, Approaching problems in a negative way: APNW, Lack of self-confidence: LSC, Unwilling to take responsibility: UTR, Insistent-persevering approach: IPA

As it is shown in Table 2, the skewness and kurtosis values ranged from -.819 to .889 for all study variables. As they were between +1.5 and -1.5, the data distribution was normal (Tabachnick & Fidell, 2013). The mean of cognitive flexibility scores was 79.29 ( $SD = 10.29$ ) of emotional self-efficacy scores was 117.46 ( $SD = 14.41$ ) of constructive problem-solving scores was 63.62 ( $SD = 9.41$ ) of approaching problems in a negative way scores was 49.59 ( $SD = 15.17$ ) of lack of self-confidence scores was 16.47 ( $SD = 6.64$ ) of unwilling to take responsibility scores was 13.77 ( $SD = 4.73$ ) and of insistent-persevering approach scores was 23.35 ( $SD = 4.29$ ).

## 4.2. Main Analyses

### 4.2.1. The Correlation Among the Levels of Cognitive Flexibility, Emotional Self-Efficacy, and Interpersonal Problem-Solving Skills of The University Students

The relationship among the university students' levels of cognitive flexibility, emotional self-efficacy, and interpersonal problem-solving skills was examined via Pearson Correlation Coefficient analysis.

Table 3

*Pearson Correlation Coefficients of The Study Variables*

| Scale and Sub-scales | 1       | 2       | 3       | 4      | 5      | 6     | 7 |
|----------------------|---------|---------|---------|--------|--------|-------|---|
| 1.ESE                | 1       |         |         |        |        |       |   |
| 2.CF                 | .516**  | 1       |         |        |        |       |   |
| 3.CPS                | .653**  | .536**  | 1       |        |        |       |   |
| 4.APNW               | -.145** | -.510** | -.085   | 1      |        |       |   |
| 5.LSC                | -.094   | -.335** | -.079   | .588** | 1      |       |   |
| 6.UTR                | -.041   | -.275** | -.160** | .531** | .640** | 1     |   |
| 7.IPA                | .373**  | .178**  | .476**  | .202** | .064   | -.046 | 1 |

Note. ESE: Emotional Self-efficacy, CF: Cognitive Flexibility, CPS: Constructive problem-solving, APNW: Approaching problems in a negative way, LSC: Lack of self-confidence, UTR: Unwilling to take responsibility, IPA: .Insistent-persevering approach,

\* $p < .05$ , \*\* $p < .01$ .

As it is indicated in Table 3, there was a positive and statistically significant relationship between emotional self-efficacy levels and cognitive flexibility levels of the university students ( $r = .516$ ;  $p < .01$ ). In other words, individuals with high emotional self-efficacy levels were also analyzed as having high cognitive flexibility levels. There was also a positive and statistically significant relationship between the participants' emotional self-efficacy levels and constructive problem-solving levels ( $r = .653$ ,  $p < .01$ ). The relationship between emotional self-efficacy levels and insistent-

persevering approach levels was positive and significant ( $r=.373, p<.01$ ). Individuals with high emotional self-efficacy levels also had high levels of insistent-persevering approach. However, there was a negative and statistically significant relationship between emotional self-efficacy levels and approaching problems in a negative way levels of the university students ( $r=-.145, p<.01$ ). Namely, individuals with low emotional self-efficacy levels had high levels of approaching problems in a negative way. On the other hand, there was not a statistically significant relationship between participants' emotional self-efficacy levels and the other sub-dimensions of the interpersonal problem-solving levels such as lack of self-confidence ( $r=-.094, p>.05$ ) and unwilling to take responsibility ( $r=-.094, p>.05$ ).

There was a positive and statistically significant relationship between participants' cognitive flexibility levels and the two sub-dimensions of the interpersonal problem-solving levels such as constructive problem-solving levels ( $r=.536, p<.01$ ) and insistent-persevering approach ( $r=.178, p<.01$ ). In other words, individuals with high cognitive flexibility levels were also analyzed as having high constructive problem solving and insistent-persevering approach levels. There was a negative and statistically significant relationship between participants' cognitive flexibility levels and the three sub-dimensions of the interpersonal problem-solving levels such as approaching problems in a negative way ( $r=-.510, p<.01$ ), lack of self-confidence ( $r=-.335, p<.019$ ), and unwilling to take responsibility ( $r=-.275, p<.01$ ). In other words, individuals with high cognitive flexibility levels were also analyzed as having low levels of approaching problems in a negative way, lack of self-confidence and unwilling to take responsibility.

#### 4.2.2. Examination of Levels of Cognitive Flexibility, Emotional Self-Efficacy and Interpersonal Problem-Solving Skills According to Gender of University Students

Independent samples *t* test was utilized to evaluate whether there was a difference in the levels of cognitive flexibility, emotional self-efficacy, and interpersonal problem-solving skills according to gender of participants. Results of the analysis are shown in Table 3.

Table 4

*Results of Independent Samples t Test Related to The Difference Among Cognitive Flexibility, Emotional Self-Efficacy, and Interpersonal Problem-Solving Skills According to Gender of The Respondents*

| Variables                              | Group  | n   | Mean   | SD    | df  | <i>t</i> | <i>p</i>      |
|----------------------------------------|--------|-----|--------|-------|-----|----------|---------------|
| Emotional Self-Efficacy                | Female | 302 | 118.43 | 14.20 | 414 | 2.230    | <b>.026*</b>  |
|                                        | Male   | 114 | 114.91 | 14.69 |     |          |               |
| Cognitive Flexibility                  | Female | 301 | 79.25  | 10.44 | 413 | -0.136   | .89           |
|                                        | Male   | 114 | 79.40  | 9.93  |     |          |               |
| Constructive Problem Solving           | Female | 302 | 64.38  | 9,39  | 414 | 2.706    | <b>.007*</b>  |
|                                        | Male   | 114 | 61.61  | 9,20  |     |          |               |
| Approaching Problems in a Negative Way | Female | 302 | 49.85  | 15,68 | 414 | 0.585    | .559          |
|                                        | Male   | 114 | 48.88  | 13,77 |     |          |               |
| Lack of Self-Confidence                | Female | 302 | 15.54  | 6,47  | 414 | -4.762   | <b>.000**</b> |
|                                        | Male   | 114 | 18.93  | 6,51  |     |          |               |
| Unwilling to Take Responsibility       | Female | 302 | 13.40  | 4,84  | 414 | -2.610   | <b>.009*</b>  |
|                                        | Male   | 114 | 14,75  | 4,31  |     |          |               |
| Insistent-Persevering Approach         | Female | 302 | 23.52  | 4,28  | 414 | 1.354    | .176          |
|                                        | Male   | 114 | 22.89  | 4,30  |     |          |               |

Note. \**p* < .05, \*\**p* < .01

As it is demonstrated in Table 4, the undergraduates' scores of cognitive flexibility, approaching problems in a negative way, and insistent-persevering approach did not show significant differences based on their gender (respectively, *t* =

0.136,  $p>.05$ ;  $t=0.585$ ,  $p>.05$ ;  $t=1.354$ ,  $p>.05$ ). On the other hand, undergraduates' emotional self-efficacy levels differed significantly based on gender ( $t(414)=2.230$ ,  $p<.05$ ). Specifically, females' emotional self-efficacy scores ( $M=118.40$ ,  $SD=14.20$ ) were higher than males' emotional self-efficacy scores ( $M=114.91$ ,  $SD=14.69$ ) and this difference is statistically significant ( $p<.05$ ).

Furthermore, their constructive problem solving levels differed significantly based on gender ( $t(414)=2.706$ ,  $p<.01$ ). In particular, the female's scores of constructive problem solving ( $M=64.38$ ,  $SD=9.39$ ) were higher than males' ( $M=61.61$ ,  $SD=9.20$ ). The lack of self-confidence and unwilling to take responsibility scores also differed significantly in regard to gender ( $t(414)=-4.762$ ,  $p<.01$ ;  $t(414)=-2.610$ ,  $p<.01$ , respectively). Namely, scores of lack of self-confidence ( $M=18.93$ ,  $SD=6.51$ ) and unwilling to take responsibility ( $M=14.75$ ,  $SD=4.31$ ) are significantly higher for males than for females' lack of self-confidence ( $M=15.54$ ,  $SD=6.47$ ) and avoiding taking responsibility scores ( $M=13.40$ ,  $SD=4.84$ ).

#### **4.2.3. Examination of Levels of Cognitive Flexibility Emotional Self-Efficacy, and Interpersonal Problem-Solving Skills According to Grade Levels of University Students**

One-way analysis of variance (ANOVA) was utilized to analyze whether there was a significant difference among levels of emotional self-efficacy, cognitive flexibility, and interpersonal problem solving-skills according to the grade levels of undergraduates. The results of one-way ANOVA are in Table 4.

Table 5

*Results of One-Way ANOVA Related to The Difference Among Levels of Emotional Self-Efficacy, Cognitive Flexibility, and Interpersonal Problem Solving-Skills According to The Respondents' Grade Levels*

| Variables                              | n, M, and SD values           |     |        |       | ANOVA Results  |                |     |             |       |       |
|----------------------------------------|-------------------------------|-----|--------|-------|----------------|----------------|-----|-------------|-------|-------|
|                                        | Group                         | n   | M      | SD    |                | Sum of Squares | df  | Mean Square | F     | p     |
| Emotional Self-efficacy                | 1 <sup>st</sup> year          | 107 | 117.75 | 13.78 | Between Groups | 2164.47        | 3   | 721.49      | 3.539 | .015* |
|                                        | 2 <sup>nd</sup> year          | 66  | 112.41 | 13.40 | Within Groups  | 83982.99       | 412 | 203.84      |       |       |
|                                        | 3 <sup>rd</sup> year          | 102 | 119.43 | 12.80 |                |                |     |             |       |       |
|                                        | 4 <sup>th</sup> year and more | 141 | 118.19 | 15.95 | Total          | 86147.46       | 415 |             |       |       |
|                                        | Total                         | 416 | 117.46 | 14.41 |                |                |     |             |       |       |
| Cognitive Flexibility                  | 1 <sup>st</sup> year          | 107 | 78.65  | 10.03 | Between Groups | 803.24         | 3   | 267.75      | 2.556 | .055  |
|                                        | 2 <sup>nd</sup> year          | 66  | 77.35  | 8.97  | Within Groups  | 43052.48       | 411 | 104.75      |       |       |
|                                        | 3 <sup>rd</sup> year          | 101 | 81.53  | 10.15 | Total          | 43855.72       | 414 |             |       |       |
|                                        | 4 <sup>th</sup> year and more | 141 | 79.02  | 10.98 |                |                |     |             |       |       |
|                                        | Total                         | 415 | 79.29  | 10.29 |                |                |     |             |       |       |
| Constructive Problem Solving           | 1 <sup>st</sup> year          | 107 | 64.03  | 9.05  | Between Groups | 327.67         | 3   | 109.22      | 1.235 | .297  |
|                                        | 2 <sup>nd</sup> year          | 66  | 61.64  | 9.02  | Within Groups  | 36442.08       | 412 | 88.45       |       |       |
|                                        | 3 <sup>rd</sup> year          | 102 | 64.30  | 9.50  | Total          | 36769.75       | 415 |             |       |       |
|                                        | 4 <sup>th</sup> year and more | 141 | 63.75  | 9.77  |                |                |     |             |       |       |
|                                        | Total                         | 416 | 63.62  | 9.41  |                |                |     |             |       |       |
| Approaching Problems in a Negative Way | 1 <sup>st</sup> year          | 107 | 50.43  | 14.20 | Between Groups | 1510.164       | 3   | 503.39      | 2.206 | .651  |
|                                        | 2 <sup>nd</sup> year          | 66  | 53.33  | 14.79 | Within Groups  | 94026.72       | 412 | 228.22      |       |       |
|                                        | 3 <sup>rd</sup> year          | 102 | 48.67  | 15.44 |                |                |     |             |       |       |
|                                        | 4 <sup>th</sup> year and more | 141 | 47.86  | 15.67 | Total          | 95536.89       | 415 |             |       |       |
|                                        | Total                         | 416 | 49.59  | 15.17 |                |                |     |             |       |       |
| Lack of Self-Confidence                | 1 <sup>st</sup> year          | 107 | 16.35  | 6.41  | Between Groups | 72.50          | 3   | 24.17       | 0.703 | .551  |
|                                        | 2 <sup>nd</sup> year          | 66  | 17.33  | 5.26  | Within Groups  | 18245.10       | 412 | 44.28       |       |       |
|                                        | 3 <sup>rd</sup> year          | 102 | 16.01  | 7.41  | Total          | 18317.59       | 415 |             |       |       |
|                                        | 4 <sup>th</sup> year and more | 141 | 16.49  | 6.84  |                |                |     |             |       |       |
|                                        | Total                         | 416 | 16.47  | 6.64  |                |                |     |             |       |       |
| Unwilling to Take Responsibility       | 1 <sup>st</sup> year          | 107 | 13.50  | 5.00  | Between Groups | 37.58          | 3   | 12.53       | 0.557 | .643  |
|                                        | 2 <sup>nd</sup> year          | 66  | 14.11  | 4.14  | Within Groups  | 9258.81        | 412 | 22.47       |       |       |
|                                        | 3 <sup>rd</sup> year          | 102 | 13.44  | 4.85  | Total          | 9296.38        | 415 |             |       |       |
|                                        | 4 <sup>th</sup> year and more | 141 | 14.05  | 4.72  |                |                |     |             |       |       |
|                                        | Total                         | 416 | 13.77  | 4.73  |                |                |     |             |       |       |

Table 5 (Continue)

| Variables                      | n, <i>M</i> , and <i>SD</i> values |     |          |           | ANOVA Results  |                |     |             |          |          |
|--------------------------------|------------------------------------|-----|----------|-----------|----------------|----------------|-----|-------------|----------|----------|
|                                | Group                              | n   | <i>M</i> | <i>SD</i> |                | Sum of Squares | df  | Mean Square | <i>F</i> | <i>p</i> |
| Insistent-Persevering Approach | 1 <sup>st</sup> year               | 107 | 23.13    | 3.72      | Between Groups | 35.18          | 3   | 11.73       | 0.637    | .592     |
|                                | 2 <sup>nd</sup> year               | 66  | 22.92    | 4.05      | Within Groups  | 7585.28        | 412 | 18.41       |          |          |
|                                | 3 <sup>rd</sup> year               | 102 | 23.76    | 4.68      |                | 7620.46        | 415 |             |          |          |
|                                | 4 <sup>th</sup> year and more      | 141 | 23.41    | 4.50      | Total          |                |     |             |          |          |
|                                | Total                              | 416 | 23.35    | 4.29      |                |                |     |             |          |          |

Note. \* $p < .05$

The analysis of variance in Table 5 shows that emotional self-efficacy levels differed significantly based on their grade levels ( $F(3,415)=3.539, p<.05$ ). However, the levels of cognitive flexibility ( $F(3,414)= 2.556, p>.05$ ), and all interpersonal problem solving sub-dimensions regarding constructive problem solving ( $F(3,415)=1.235, p>.05$ ), approaching problems in a negative way ( $F(3,415)=2.206, p>.05$ ), unwilling to take responsibility ( $F(3,415)=0.557, p>.05$ ), insistent-persevering approach ( $F(3,415)=0.637, p>.05$ ), and lack of self-confidence ( $F(3,415)=0.703, p>.05$ ) did not differ in terms of their grade levels.

In order to understand the differences in emotional self-efficacy scores based on the grade levels, Scheffe, one of the post hoc analysis, was conducted. Scheffe was chosen because Levene's test showed equal variances in terms of homogeneity.

Table 6

*Scheffe Test Results Regarding the Analysis of the Difference in Emotional Self-Efficacy Levels of University Students by Grade levels*

| Dependent Variable      | Grade level (I)                | Grade level (J)                | Mean difference (I-J) | S.E. | p            |
|-------------------------|--------------------------------|--------------------------------|-----------------------|------|--------------|
| Emotional Self-efficacy | 1 <sup>st</sup> year           | 2 <sup>nd</sup> year           | 5.34                  | 2.23 | .129         |
|                         |                                | 3 <sup>rd</sup> year           | -1.68                 | 1.98 | .867         |
|                         |                                | 4 <sup>th</sup> year and upper | -0.44                 | 1.83 | .996         |
|                         | 2 <sup>nd</sup> year           | 1 <sup>st</sup> year           | -5.34                 | 2.23 | .129         |
|                         |                                | 3 <sup>rd</sup> year           | -7.02                 | 2.26 | <b>.022*</b> |
|                         |                                | 4 <sup>th</sup> year and upper | -5.78                 | 2.13 | .062         |
|                         | 3 <sup>rd</sup> year           | 1 <sup>st</sup> year           | 1.68                  | 1.98 | .867         |
|                         |                                | 2 <sup>nd</sup> year           | 7.02                  | 2.26 | <b>.022*</b> |
|                         |                                | 4 <sup>th</sup> year and upper | 1.24                  | 1.86 | .930         |
|                         | 4 <sup>th</sup> year and upper | 1 <sup>st</sup> year           | 0.44                  | 1.83 | .996         |
|                         |                                | 2 <sup>nd</sup> year           | 5.78                  | 2.13 | .062         |
|                         |                                | 3 <sup>rd</sup> year           | -1.24                 | 1.86 | .930         |

Note. \* $p < .05$ , \*\* $p < .01$

As it is seen in Table 6, emotional self-efficacy scores of individuals in 2<sup>nd</sup> year ( $M=112.41$ ,  $SD=13.40$ ) had lower emotional self-efficacy scores than individuals in 3<sup>rd</sup> year ( $M=119.43$ ,  $SD=12.80$ ), and this difference is statistically significant ( $p<.05$ ). However, the emotional self-efficacy scores of other groups did not differ according to their grade levels ( $p>.05$ ).

#### **4.2.4. Examination of Levels of Cognitive Flexibility, Emotional Self-Efficacy and Interpersonal Problem-Solving Skills According to Educational Levels of Participants' Mothers**

One-way analysis of variance (ANOVA) was utilized to analyze whether there was a difference among levels of emotional self-efficacy, cognitive flexibility, and interpersonal problem solving-skills according to the educational levels of participants' mothers. The results of one-way ANOVA are in Table 7.

Table 7

*Results of One-Way ANOVA Related to The Difference Among Levels of Emotional Self-Efficacy, Cognitive Flexibility, and Interpersonal Problem Solving-Skills According to Educational Levels of Participants' Mothers*

| Variables                              | n, M, and SD values        |     |        |       | ANOVA Results  |                |     |             |       |      |
|----------------------------------------|----------------------------|-----|--------|-------|----------------|----------------|-----|-------------|-------|------|
|                                        | Group                      | n   | M      | SD    |                | Sum of Squares | df  | Mean Square | F     | p    |
| Emotional Self-efficacy                | Primary school and lower   | 116 | 117.20 | 15.77 | Between Groups | 540.17         | 2   | 270.08      | 1.303 | .273 |
|                                        | High School Graduate       | 148 | 118.91 | 14.21 | Within Groups  | 85607.29       | 413 | 207.28      |       |      |
|                                        | Bachelor and Post-graduate | 152 | 116.26 | 13.45 | Total          | 86147.46       | 415 |             |       |      |
|                                        | Total                      | 416 | 117.46 | 14.41 |                |                |     |             |       |      |
| Cognitive Flexibility                  | Primary school and lower   | 115 | 79.73  | 10.82 | Between Groups | 31.44          | 2   | 15.72       | 0.148 | .863 |
|                                        | High School Graduate       | 148 | 79.18  | 11.04 | Within Groups  | 43824.28       | 412 | 106.37      |       |      |
|                                        | Bachelor and Post-graduate | 152 | 79.02  | 9.11  | Total          | 43855.72       | 414 |             |       |      |
|                                        | Total                      | 415 | 79.29  | 10.29 |                |                |     |             |       |      |
| Constructive Problem Solving           | Primary school and lower   | 116 | 63.41  | 10.50 | Between Groups | 9.66           | 2   | 4.83        | 0.048 | .950 |
|                                        | High School Graduate       | 148 | 63.79  | 9.53  | Within Groups  | 36760.09       | 413 | 89.01       |       |      |
|                                        | Bachelor and Post-graduate | 152 | 63.63  | 8.44  | Total          | 36769.75       | 415 |             |       |      |
|                                        | Total                      | 416 | 63.62  | 9.41  |                |                |     |             |       |      |
| Approaching Problems in a Negative Way | Primary school and lower   | 116 | 48.72  | 15.11 | Between Groups | 501.24         | 2   | 250.62      | 1.089 | .337 |
|                                        | High School Graduate       | 148 | 48.78  | 15.76 | Within Groups  | 95035.65       | 413 | 230.11      |       |      |
|                                        | Bachelor and Post-graduate | 152 | 51.03  | 14.62 | Total          | 95536.89       | 415 |             |       |      |
|                                        | Total                      | 416 | 49.59  | 15.17 |                |                |     |             |       |      |
| Lack of Self-Confidence                | Primary school and lower   | 116 | 16.50  | 6.62  | Between Groups | 3.00           | 2   | 1.497       | 0.034 | .967 |
|                                        | High School Graduate       | 148 | 16.36  | 6.99  | Within Groups  | 18314.60       | 413 | 44.35       |       |      |
|                                        | Bachelor and Post-graduate | 152 | 16.55  | 6.35  | Total          | 18317.60       | 415 |             |       |      |
|                                        | Total                      | 416 | 16.47  | 6.64  |                |                |     |             |       |      |

Table 7 (Continue)

| Variables                        | n, <i>M</i> , and <i>SD</i> values |     |          |           | ANOVA Results  |                |     |             |          |          |
|----------------------------------|------------------------------------|-----|----------|-----------|----------------|----------------|-----|-------------|----------|----------|
|                                  | Group                              | n   | <i>M</i> | <i>SD</i> |                | Sum of Squares | df  | Mean Square | <i>F</i> | <i>p</i> |
| Unwilling to Take Responsibility | Primary school and lower           | 116 | 14.00    | 5.29      | Between Groups | 10.40          | 2   | 5.20        | 0.198    | .820     |
|                                  | High School Graduate               | 148 | 13.60    | 4.84      | Within Groups  | 9285.98        | 413 | 22.48       |          |          |
|                                  | Bachelor and Post-graduate         | 152 | 13.75    | 4.16      | Total          | 9296.38        | 415 |             |          |          |
|                                  | Total                              | 416 | 13.77    | 4.73      |                |                |     |             |          |          |
| Insistent-Persevering Approach   | Primary school and lower           | 116 | 23.11    | 4.60      | Between Groups | 49.16          | 2   | 24.58       | 1.341    | .263     |
|                                  | High School Graduate               | 148 | 23.81    | 4.12      | Within Groups  | 7571.30        | 413 | 18.33       |          |          |
|                                  | Bachelor and Post-graduate         | 152 | 23.08    | 4.19      | Total          | 7620.46        | 415 |             |          |          |
|                                  | Total                              | 416 | 23.35    | 4.29      |                |                |     |             |          |          |

Note. \* $p < .05$ , \*\* $p < .01$

The analysis of variance in the Table 7 shows that the levels of cognitive flexibility ( $F(2,414)=0.148, p>.05$ ), emotional self-efficacy ( $F(2,415)=1.303, p>.05$ ), and all interpersonal problem-solving dimensions regarding constructive problem solving ( $F(2,415)=0.048, p>.05$ ), approaching problems in a negative way ( $F(2,415)=1.089, p>.05$ ), unwilling to take responsibility ( $F(2,415)=0.198, p>.05$ ), insistent-persevering approach ( $F(2,415)=1.341, p>.05$ ), and lack of self-confidence ( $F(2,415)=0.034, p>.05$ ) did not differ in terms of educational levels of participants' mothers.

#### 4.2.5. Examination of Levels of Emotional Self-Efficacy, Cognitive Flexibility, and Interpersonal Problem-Solving Skills According to Educational Levels of Participants' Fathers

One-way analysis of variance (ANOVA) was utilized to analyze whether there was a difference among levels of emotional self-efficacy, cognitive flexibility, and

interpersonal problem solving-skills according to the educational levels of participants' fathers. The results of one-way ANOVA are in Table 8.

Table 8

*Results of One-Way ANOVA Related to The Difference Among Levels of Emotional Self-Efficacy, Cognitive Flexibility, and Interpersonal Problem Solving-Skills According to Educational Levels of Participants' Fathers*

| Variables                              | n, M, and SD values        |     |        |       | ANOVA Results  |                |     |             |       |      |
|----------------------------------------|----------------------------|-----|--------|-------|----------------|----------------|-----|-------------|-------|------|
|                                        | Group                      | n   | M      | SD    |                | Sum of Squares | df  | Mean Square | F     | p    |
| Emotional Self-efficacy                | Primary school and lower   | 110 | 115.34 | 14.34 | Between Groups | 719.63         | 2   | 359.81      | 1.740 | .177 |
|                                        | High School Graduate       | 116 | 118.71 | 14.45 | Within Groups  | 85427.83       | 413 | 206.85      |       |      |
|                                        | Bachelor and Post-graduate | 190 | 117.94 | 14.16 | Total          | 86147.46       | 415 |             |       |      |
|                                        | Total                      | 416 | 117.46 | 14.41 |                |                |     |             |       |      |
| Cognitive Flexibility                  | Primary school and lower   | 109 | 79.08  | 9.88  | Between Groups | 138.56         | 2   | 96.28       | 0.653 | .521 |
|                                        | High School Graduate       | 116 | 80.21  | 11.26 | Within Groups  | 43717.17       | 412 | 106.11      |       |      |
|                                        | Bachelor and Post-graduate | 190 | 78.85  | 9.92  | Total          | 43855.73       | 414 |             |       |      |
|                                        | Total                      | 415 | 79.29  | 10.29 |                |                |     |             |       |      |
| Constructive Problem Solving           | Primary school and lower   | 110 | 63.13  | 10.32 | Between Groups | 181.49         | 2   | 90.75       | 1.024 | .360 |
|                                        | High School Graduate       | 116 | 64.68  | 9.58  | Within Groups  | 36588.26       | 413 | 88.59       |       |      |
|                                        | Bachelor and Post-graduate | 190 | 63.26  | 8.74  | Total          | 36769.75       | 415 |             |       |      |
|                                        | Total                      | 416 | 63.62  | 9.41  |                |                |     |             |       |      |
| Approaching Problems in a Negative Way | Primary school and lower   | 110 | 50.45  | 15.29 | Between Groups | 197.46         | 2   | 98.73       | 0.361 | .697 |
|                                        | High School Graduate       | 116 | 48.59  | 17.44 | Within Groups  | 95339.42       | 413 | 230.85      |       |      |
|                                        | Bachelor and Post-graduate | 190 | 49.69  | 13.59 | Total          | 95536.89       | 415 |             |       |      |
|                                        | Total                      | 416 | 49.59  | 15.17 |                |                |     |             |       |      |

Table 8 (Continue)

| Variables                        | n, <i>M</i> , and <i>SD</i> values |     |          |           | ANOVA Results  |                |     |             |          |          |
|----------------------------------|------------------------------------|-----|----------|-----------|----------------|----------------|-----|-------------|----------|----------|
|                                  | Group                              | n   | <i>M</i> | <i>SD</i> |                | Sum of Squares | df  | Mean Square | <i>F</i> | <i>p</i> |
| Lack of Self-Confidence          | Primary school and lower           | 110 | 16.69    | 6.66      | Between Groups | 29.72          | 2   | 14.86       | 0.336    | .715     |
|                                  | High School Graduate               | 116 | 16.04    | 6.82      | Within Groups  | 18287.88       | 413 | 44.28       |          |          |
|                                  | Bachelor and Post-graduate         | 190 | 16.60    | 6.55      | Total          | 18317.60       | 415 |             |          |          |
|                                  | Total                              | 416 | 16.47    | 6.64      |                |                |     |             |          |          |
| Unwilling to Take Responsibility | Primary school and lower           | 110 | 13.96    | 5.17      | Between Groups | 17.26          | 2   | 8.63        | 0.466    | .628     |
|                                  | High School Graduate               | 116 | 13.45    | 4.86      | Within Groups  | 9279.12        | 413 | 22.468      |          |          |
|                                  | Bachelor and Post-graduate         | 190 | 13.85    | 4.40      | Total          | 9296.38        | 415 |             |          |          |
|                                  | Total                              | 416 | 13.77    | 4.73      |                |                |     |             |          |          |
| Insistent-Persevering Approach   | Primary school and lower           | 110 | 23.18    | 4.74      | Between Groups | 17.17          | 2   | 8.59        | 0.501    | .606     |
|                                  | High School Graduate               | 116 | 23.67    | 3.98      | Within Groups  | 7603.29        | 413 | 18.41       |          |          |
|                                  | Bachelor and Post-graduate         | 190 | 23.25    | 4.20      | Total          | 7620.46        | 415 |             |          |          |
|                                  | Total                              | 416 | 23.35    | 4.29      |                |                |     |             |          |          |

Note. \* $p < .05$ , \*\* $p < .01$

The analysis of variance in the Table 8 shows that the levels of cognitive flexibility ( $F(2,414)=0.653, p>.05$ ), emotional self-efficacy ( $F(2,415)=1.740, p>.05$ ), and all interpersonal problem solving dimensions regarding constructive problem solving ( $F(2,415)=1,024, p>.05$ ), approaching problems in a negative way ( $F(2,415)=0,36, p>.05$ ), unwilling to take responsibility ( $F(2,415)=0.466, p>.05$ ), insistent-persevering approach ( $F(2,415)=0.501, p>.05$ ), and lack of self-confidence ( $F(2,415)=0.336, p>.05$ ) did not differ in terms of educational levels of participants' fathers.

#### 4.2.6. Examination of Levels of Emotional Self-Efficacy, Cognitive Flexibility, and Interpersonal Problem-Solving Skills According to Program Types of Participants

One-way analysis of variance (ANOVA) was utilized to analyze whether there was a difference among levels of emotional self-efficacy, cognitive flexibility, and interpersonal problem solving-skills according to the program types of participants.

The results of one-way ANOVA are in Table 9.

Table 9

*Results of One-Way ANOVA Related to The Difference Among Levels of Emotional Self-Efficacy, Cognitive Flexibility, and Interpersonal Problem Solving-Skills According to Participants' Program Types*

| Variables                              | n, <i>M</i> , and <i>SD</i> values |     |          |           | ANOVA Results  |                |     |             |          |              |
|----------------------------------------|------------------------------------|-----|----------|-----------|----------------|----------------|-----|-------------|----------|--------------|
|                                        | Group                              | n   | <i>M</i> | <i>SD</i> |                | Sum of Squares | df  | Mean Square | <i>F</i> | <i>p</i>     |
| Emotional Self-efficacy                | Social Science                     | 257 | 118.86   | 14.12     | Between Groups | 1429.15        | 2   | 714.58      | 3.484    | <b>.032*</b> |
|                                        | Science                            | 129 | 114.79   | 14.67     | Within Groups  | 84718.31       | 413 | 205.13      |          |              |
|                                        | Medicine                           | 30  | 117.00   | 14.47     | Total          | 86147.46       | 415 |             |          |              |
|                                        | Total                              | 416 | 117.46   | 14.41     |                |                |     |             |          |              |
| Cognitive Flexibility                  | Social Science                     | 256 | 79.30    | 10.37     | Between Groups | 57.77          | 2   | 28.88       | 0.272    | .762         |
|                                        | Science                            | 129 | 79.57    | 9.70      | Within Groups  | 43797.96       | 412 | 106.31      |          |              |
|                                        | Medicine                           | 30  | 78.03    | 12.24     | Total          | 43855.72       | 414 |             |          |              |
|                                        | Total                              | 415 | 79.29    | 10.29     |                |                |     |             |          |              |
| Constructive Problem Solving           | Social Science                     | 257 | 64.13    | 9.70      | Between Groups | 172.44         | 2   | 86.29       | 0.973    | .379         |
|                                        | Science                            | 129 | 62.83    | 8.69      | Within Groups  | 36252.31       | 413 | 88.61       |          |              |
|                                        | Medicine                           | 30  | 62.70    | 9.92      | Total          | 36769.75       | 415 |             |          |              |
|                                        | Total                              | 416 | 63.63    | 9.41      |                |                |     |             |          |              |
| Approaching Problems in a Negative Way | Social Science                     | 257 | 50.69    | 15.60     | Between Groups | 1284.57        | 2   | 642.29      | 2.814    | .061         |
|                                        | Science                            | 129 | 46.98    | 14.16     | Within Groups  | 94252.31       | 413 | 228.21      |          |              |
|                                        | Medicine                           | 30  | 51.33    | 14.73     | Total          | 95536.89       | 415 |             |          |              |
|                                        | Total                              | 416 | 49.59    | 15.17     |                |                |     |             |          |              |
| Lack of Self-Confidence                | Social Science                     | 257 | 16.53    | 6.82      | Between Groups | 42.12          | 2   | 21.06       | 0.476    | .622         |
|                                        | Science                            | 129 | 16.60    | 6.53      | Within Groups  | 18275.47       | 413 | 44.25       |          |              |
|                                        | Medicine                           | 30  | 15.33    | 5.62      | Total          | 18317.59       | 415 |             |          |              |
|                                        | Total                              | 416 | 16.47    | 6.64      | Between Groups | 42.12          | 2   | 21.06       | 0.476    | .622         |

Table 9 (Continue)

| Variables                        | n, <i>M</i> , and <i>SD</i> values |     |          |           | ANOVA Results  |                |     |             |          |          |
|----------------------------------|------------------------------------|-----|----------|-----------|----------------|----------------|-----|-------------|----------|----------|
|                                  | Group                              | n   | <i>M</i> | <i>SD</i> |                | Sum of Squares | df  | Mean Square | <i>F</i> | <i>p</i> |
| Unwilling to Take Responsibility | Social Science                     | 257 | 14.01    | 4.83      | Between Groups | 70.56          | 2   | 35.28       | 1.579    | .207     |
|                                  | Science                            | 129 | 13.58    | 4.37      | Within Groups  | 9225.83        | 413 | 22.34       |          |          |
|                                  | Medicine                           | 30  | 12.47    | 5.26      | Total          | 9296.38        | 415 |             |          |          |
|                                  | Total                              | 416 | 13.77    | 4.73      |                |                |     |             |          |          |
| Insistent-Persevering Approach   | Social Science                     | 257 | 23.53    | 4.25      | Between Groups | 22.70          | 2   | 11.35       | 0.617    | .540     |
|                                  | Science                            | 129 | 23.02    | 4.46      | Within Groups  | 7597.76        | 413 | 18.40       |          |          |
|                                  | Medicine                           | 30  | 23.20    | 3.77      | Total          | 7620.46        | 415 |             |          |          |
|                                  | Total                              | 416 | 23.35    | 4.29      |                |                |     |             |          |          |

Note. \* $p < .05$ , \*\* $p < .01$

The analysis of variance in Table 9 that emotional self-efficacy levels differed significantly according to their program types ( $F(2,415) = 3.484, p < .05$ ). However, the scores of cognitive flexibility ( $F(2,412) = 0.272, p > .05$ ), and all interpersonal problem solving dimensions such as constructive problem solving ( $F(2,415) = 0.973, p > .05$ ), approaching problems in a negative way ( $F(2,415) = 2.814, p > .05$ ), unwilling to take responsibility ( $F(2,415) = 1.579, p > .05$ ), insistent-persevering approach ( $F(2,413) = 0.617, p > .05$ ), and lack of self-confidence ( $F(2,415) = 0.476, p > .05$ ) did not differ in terms of their program types. In order to understand the differences in emotional self-efficacy scores according to the program types, Scheffe was conducted. Scheffe was chosen because Levene's test showed equal variances in terms of homogeneity.

Table 10

*Scheffe Test Results Regarding the Analysis of the Differences in Emotional Self-Efficacy Levels of University Students by The Program Types*

| Dependent Variable      | The field of education (I) | The field of education (J) | Mean difference (I-J) | S.E. | <i>p</i>     |
|-------------------------|----------------------------|----------------------------|-----------------------|------|--------------|
| Emotional Self-efficacy | Social Science             | Science                    | 4.07                  | 1.55 | <b>.032*</b> |
|                         |                            | Health sciences            | 1.86                  | 2.76 | .797         |
|                         | Science                    | Social Science             | -4.07                 | 1.55 | <b>.032*</b> |
|                         |                            | Health sciences            | -2.21                 | 2.90 | .749         |
|                         | Health sciences            | Social Science             | -1.86                 | 2.76 | .797         |
|                         |                            | Science                    | 2.21                  | 2.90 | .749         |

Note. \* $p < .05$ , \*\* $p < .01$

As it is seen in Table 10, individuals in social science ( $M=118.86$ ,  $SD=14.13$ ) had more emotional self-efficacy scores than individuals in science ( $M=114.79$ ,  $SD=14.67$ ) ( $p<.05$ ), and this difference is statistically significant ( $p<.05$ ) Yet, the emotional self-efficacy scores of other groups did not differ according to their program types ( $p>.05$ ).

#### **4.2.7. Examination of Levels of Emotional Self-Efficacy, Cognitive Flexibility, and Interpersonal Problem-Solving Skills According to Undergraduates' Ages**

One-way analysis of variance (ANOVA) was utilized to analyze whether there was a difference among levels of emotional self-efficacy, cognitive flexibility, and interpersonal problem solving-skills according to the variables of participants' ages. Results of one-way ANOVA are in Table 11.

Table 11

*Results of One-Way ANOVA Related to The Difference Among Levels of Emotional Self-Efficacy, Cognitive Flexibility, and Interpersonal Problem Solving-Skills According to The Participants' Ages*

| Variables                              | n, <i>M</i> , and <i>SD</i> values |          |          |           | ANOVA Results  |                |     |             |          |               |
|----------------------------------------|------------------------------------|----------|----------|-----------|----------------|----------------|-----|-------------|----------|---------------|
|                                        | Group                              | <i>n</i> | <i>M</i> | <i>SD</i> |                | Sum of Squares | df  | Mean Square | <i>F</i> | <i>p</i>      |
| Emotional Self-efficacy                | 18-20                              | 142      | 115.94   | 13.74     | Between Groups | 1585.27        | 2   | 792.63      | 3.871    | <b>.022*</b>  |
|                                        | 21-22                              | 146      | 120.12   | 13.71     | Within Groups  | 84562.19       | 413 | 204.75      |          |               |
|                                        | 23 and older                       | 128      | 116.13   | 15.54     | Total          | 86147.46       | 415 |             |          |               |
|                                        | Total                              | 416      | 117.46   | 14.41     |                |                |     |             |          |               |
| Cognitive Flexibility                  | 18-20                              | 142      | 78.75    | 9.78      | Between Groups | 96.18          | 2   | 48.09       | 0.453    | .636          |
|                                        | 21-22                              | 145      | 79.24    | 10.80     | Within Groups  | 43759.54       | 412 | 106.21      |          |               |
|                                        | 23 and older                       | 128      | 79.95    | 10.30     | Total          | 43855.72       | 414 |             |          |               |
|                                        | Total                              | 415      | 79.29    | 10.29     |                |                |     |             |          |               |
| Constructive Problem Solving           | 18-20                              | 142      | 63.80    | 8.95      | Between Groups | 270.54         | 2   | 135.27      | 1.531    | .218          |
|                                        | 21-22                              | 146      | 64.45    | 9.71      | Within Groups  | 36499.21       | 413 | 88.376      |          |               |
|                                        | 23 and older                       | 128      | 62.48    | 9.54      | Total          | 36769.75       | 415 |             |          |               |
|                                        | Total                              | 416      | 63.62    | 9.41      |                |                |     |             |          |               |
| Approaching Problems in a Negative Way | 18-20                              | 142      | 50.30    | 14.60     | Between Groups | 2211.783       | 2   | 1105.89     | 4.894    | <b>.008**</b> |
|                                        | 21-22                              | 146      | 51.81    | 15.16     | Within Groups  | 93325.10       | 413 | 225.97      |          |               |
|                                        | 23 and older                       | 128      | 46.26    | 15.35     | Total          | 95536.89       | 415 |             |          |               |
|                                        | Total                              | 416      | 49.59    | 15.17     |                |                |     |             |          |               |
| Lack of Self-Confidence                | 18-20                              | 142      | 16.25    | 6.02      | Between Groups | 53.00          | 2   | 26.50       | 0.549    | .578          |
|                                        | 21-22                              | 146      | 16.95    | 7.22      | Within Groups  | 18264.59       | 413 | 44.22       |          |               |
|                                        | 23 and older                       | 128      | 16.16    | 6.64      | Total          | 18317.59       | 415 |             |          |               |
|                                        | Total                              | 416      | 16.47    | 6.64      |                |                |     |             |          |               |
| Unwilling to Take Responsibility       | 18-20                              | 142      | 13.38    | 4.59      | Between Groups | 112.06         | 2   | 56.03       | 2.520    | .082          |
|                                        | 21-22                              | 146      | 14.47    | 5.06      | Within Groups  | 9184.32        | 413 | 22.24       |          |               |
|                                        | 23 and older                       | 128      | 13.39    | 4.43      | Total          | 9296.38        | 415 |             |          |               |
|                                        | Total                              | 416      | 13.77    | 4.73      |                |                |     |             |          |               |
| Insistent-Persevering Approach         | 18-20                              | 142      | 23.56    | 3.82      | Between Groups | 28.29          | 2   | 14.14       | 0.691    | .502          |
|                                        | 21-22                              | 146      | 23.48    | 4.26      | Within Groups  | 7592.17        | 413 | 18.38       |          |               |
|                                        | 23 and older                       | 128      | 22.96    | 4.79      | Total          | 7620.46        | 415 |             |          |               |
|                                        | Total                              | 416      | 23.35    | 4.29      |                |                |     |             |          |               |

Note. \* $p < .05$ , \*\* $p < .01$

The analysis of variance in Table 11 shows that emotional self-efficacy levels ( $F(2,415)=3.871, p<.05$ ) and approaching problems in a negative way levels ( $F(2,415)= 4.894, p<.01$ ), one of subdimension of interpersonal problem solving skills, differed significantly according to their age variable. However, the levels of cognitive flexibility ( $F(2,412)=0.453, p>.05$ ), constructive problem solving ( $F(2,415)= 1.531, p>.05$ ), lack of self-confidence ( $F(2,415)=0.599, p>.05$ ), unwilling to take responsibility ( $F(2,415)=2.520, p>.05$ ), and insistent-persevering approach ( $F(2,415)=0.769, p>.05$ ) did not differ in terms of their age.

In order to understand the differences in emotional self-efficacy and approaching problems in a negative way scores based on the age, Scheffe was conducted, because Levene's test showed equal variances in terms of homogeneity.

Table 12

*Scheffe Test Results Regarding the Analysis of the Difference in Emotional Self-Efficacy Levels by the Participants' Ages*

| Dependent Variable      | Grade level (I) | Grade level (J) | Mean difference (I-J) | S.E. | <i>p</i>     |
|-------------------------|-----------------|-----------------|-----------------------|------|--------------|
| Emotional Self-efficacy | 18-20           | 21-22           | -4.18                 | 1.69 | <b>.047*</b> |
|                         |                 | 23 and older    | -0.20                 | 1.74 | .994         |
|                         | 21-22           | 18-20           | 4.18                  | 1.69 | <b>.047*</b> |
|                         |                 | 23 and older    | 3.98                  | 1.73 | .072         |
|                         | 23 and older    | 18-20           | 0.20                  | 1.74 | .994         |
|                         |                 | 21-22           | -3.98                 | 1.73 | .072         |

Note. \* $p < .05$ , \*\* $p < .01$

As it is seen in Table 12, emotional self-efficacy levels of individuals aged 18-20 ( $M=115.94, SD=13.74$ ) are lower than those of individuals aged 21-22 ( $M=120.12, SD=13.71$ ), and this difference is statistically significant ( $p<.05$ ). Otherwise, there is

not statistically significant difference among the emotional self-efficacy scores of individuals according to other age groups ( $p>.05$ ).

Table 13

*Scheffe Test Results Regarding the Analysis of the Difference in Approaching Problems in a Negative Way Levels by the Participants' Ages*

| Dependent Variable                     | Grade level (I) | Grade level (J) | Mean difference (I-J) | S.E. | <i>p</i>     |
|----------------------------------------|-----------------|-----------------|-----------------------|------|--------------|
| Approaching Problems in a Negative Way | 18-20           | 21-22           | -1.51                 | 1.77 | .697         |
|                                        |                 | 23 and older    | 4.05                  | 1.83 | .089         |
|                                        | 21-22           | 18-20           | 1.51                  | 1.77 | .697         |
|                                        |                 | 23 and older    | 5.55                  | 1.82 | <b>.010*</b> |
|                                        | 23 and older    | 18-20           | -4.05                 | 1.83 | .089         |
|                                        |                 | 21-22           | -5.55                 | 1.82 | <b>.010*</b> |

Note. \* $p < .05$ , \*\* $p < .01$

As it is seen in Table 13, approaching problems in a negative way levels of individuals aged 21-22 ( $M=51.81$ ,  $SD=15.16$ ) are higher than those of individuals aged 23 and older ( $M=46.26$ ,  $SD=15.35$ ), and this difference is statistically significant ( $p<.05$ ). The difference between approaching problems in a negative way scores of other groups is not statistically significant ( $p>.05$ ).

## CHAPTER 5: DISCUSSION

This research was carried out to examine the cognitive flexibility, emotional self-efficacy and interpersonal problem-solving skills of university students. In addition, other purposes of the related research includes investigating whether the research variables show a significant difference according to the gender of the students, their grade level, education level of their parents, the program types they study and their ages.

When the research findings are examined, it was concluded that there is a positive and significant relationship between university students' cognitive flexibility and emotional self-efficacy levels. In other words, as the cognitive flexibility levels of university students increase, their emotional self-efficacy levels also increase. When the relevant literature is examined, there is no sufficient number of studies examining cognitive flexibility and emotional self-efficacy together, but there are studies that include these two concepts under different headings and have similar results. As a matter of fact, a finding similar to the finding in the current study is seen in Akyüz (2020)'s study in which he compared the concepts of cognitive flexibility and general self-efficacy. Similar results are expressed in the studies of Baki (2020) and Gosh and Halder (2020) in which they compared the concepts of cognitive flexibility and emotion regulation. When the aforementioned finding is examined, it can be said that university students' ability to consider alternative options, reasoning and adapting to unexpected situations is effective in expressing their emotions and making them competent in managing emotions.

It has been found that cognitive flexibility has a positive relationship with constructive problem solving, insistent-persevering approach, which are sub-dimensions of interpersonal problem solving skills, and a negative relationship with approaching problems in a negative way, lack of self-confidence and unwilling to take responsibility approach. In other words, as the cognitive flexibility levels of university students increase, it is seen that their constructive problem-solving skills and insistent-persevering approaches increase, while the levels of approaching problems in a negative way, lack of self-confidence and unwilling to take responsibility approach decrease. As a matter of fact, a finding similar to the finding in the current study is seen in the study of Sarıkaya (2019) with a sample of adolescents. In Sarıkaya's study, there was a negative relationship between cognitive flexibility and approaching problems in a negative way, unwilling to take responsibility approach and lack of self-confidence. On the other hand, positive significant relationships were found between insistent-persevering approach and constructive problem solving. However, Aygun (2008)'s research contradicts the findings of the current study. In Aygun's study, negative significant relationships were found between the alternatives sub-dimension of cognitive flexibility and constructive problem solving and insistent-persevering approach, and positively significant relationships were found between the controls sub-dimension of cognitive flexibility and negative approach to the problem. A weak positive correlation was found between the control sub-dimension of cognitive flexibility and lack of self-confidence and unwilling to take responsibility approach. However, when the literature related to the research findings is examined, there are also studies that include interpersonal problem solving and cognitive flexibility which emphasize that these two concepts have a positive and significant relationship with each other. Findings that coincide with the results in the current research is also seen

in studies such as Sucu's (2020) on social problem solving, Idawati, Setyosari, Kuswandi, and Ulfa's (2020) on problem solving, and Chesebro and Martin's (2003) on interpersonal aggression. In line with the findings of related studies, the relevant finding of the current study can be interpreted as follows: It can be said that individuals with cognitive flexibility tend to solve constructive problems. In particular, close relationships affect an individual's entire life during young adulthood (Ericson, 1968). For this reason, the approaches of the individuals concerned about the problems they encounter are also important for the future developmental periods. In that case, a young adult who can be flexible in their thinking can be more accommodating, more responsible and more tolerant in his interpersonal relationships, and this may enable him to have longer-term relationships.

It was concluded that emotional self-efficacy, which is one of the sub-dimensions of interpersonal problem-solving skills, has a positive relationship with constructive problem solving, an insistent-persevering approach, and a negative relationship with approaching problems in a negative way, and it has no relationship with lack of self-confidence and unwilling to take responsibility. In other words, as the emotional self-efficacy levels of university students increase, their constructive problem-solving skills and insistent-persevering approaches increase, and levels of approaching problems in a negative way decreases. In the related literature, no study was found in which university students were studied as a sample of a research concerning interpersonal problem solving and emotional self-efficacy together. However, the findings of Erözkan (2013)'s research with adolescents support the findings of the current study. In Erözkan's study, as adolescents' constructive problem-solving skills and insistent-persevering approaches increased, their social self-efficacy levels also increased. On the other hand, as the levels of approaching

problems in a negative way, lack of self-confidence and unwilling to take responsibility increased, their social self-efficacy decreased. As a similar finding, Dehaghani and Yousefi (2016) concluded in their study that emotional self-efficacy is a predictor of constructive problem solving in university students. However, Gök's (2020) study which was conducted on a sample of adolescents demonstrates a finding that contradicts with the current research findings. Gök concluded that there is no significant relationship between problem solving and emotional self-efficacy. In line with the findings of related studies, the finding of the current study can be interpreted as follows: Individuals who find themselves competent in terms of emotional self-efficacy may tend to solve their problems in a constructive way. At this point, it can be thought that individuals can assume more constructive roles in their bilateral relations only when they can manage their own emotions and understand the emotions of others.

When the findings of the current study were examined, no statistically significant difference was found in the cognitive flexibility levels of university students according to their genders. Similar results with the current study were also reported in the research conducted by Basut (2020) and Sucu (2020) with university students. Besides, in the studies conducted by Akyüz (2020), Balta (2020) and Aygun (2018) with university students, it was observed that women are more cognitively flexible than men. It can be thought that the different findings in different studies are due to the differences in research designs and the characteristics of the relevant samples in the studies.

Another finding in the study is that the emotional self-efficacy levels of university students showed a significant difference according to their gender in favor

of women. In other words, the emotional self-efficacy levels of female university students are higher than male students. This finding is in line with the studies of Beri and Jane (2016) on undergraduate students. However, when other related studies were examined, it was concluded that there was no significant relationship between gender and emotional self-efficacy (Çatal, 2019; Çutuk, 2019; Dacre, Pool, & Qualter, 2012; Gök, 2020; Totan, İkiz, & Karaca, 2010). It can be thought that the different findings in various studies stem from the perception of gender, that is, from the different social roles of women / men in the inhabited regions. When the gender role in collectivistic cultures is examined, it is seen that since childhood women are motivated to be more emotional in relationships and to reveal their emotional side more than man (Vatandaş, 2007). It is observed that men are more encouraged to hide their feelings. In this context, it can be thought that the finding in the present study was obtained as a result of the culture in which one lives.

Additionally, it was found that there was no statistically significant difference in the levels of approaching problems in a negative way and insistent-persevering approach of university students' interpersonal problem-solving skills according to their genders. On the other hand, it was concluded that university students' interpersonal problem-solving skills differ in favor of women in constructive problem solving level, and in favor of men in levels of lack of self-confidence and unwilling to take responsibility approach. In other words, it was found that the constructive problem-solving skills of female university students were higher, and the levels of lack of self-confidence and unwilling to take responsibility approach were lower compared to males. As a matter of fact, a partially similar finding is seen in the studies of Koç, Terzi, and Gül (2015), concluding that lack of self-confidence is at a higher level in men. Çam and Tümkaya (2016) conducted another study that yielded

partially similar results with the current research findings. Çam and Tümkaya's study concluded that lack of self-confidence is higher in males, a finding similar to the current study. Moreover, as a divergent finding, they concluded that approaching problems in a negative way and insistent-persevering approach were higher in women. Additionally, no significant difference was found in the levels of constructive problem solving and unwilling to take responsibility approach. However, a different finding found in the studies of Londahl et al. (2005) and Sarıkaya (2019), show that interpersonal problem solving did not differ according to gender. On the other hand, D'Zurilla et al. (1998) and Sucu (2020), who carried out their studies concerning social problem solving, obtained different results from the current research. No differentiation was found in Sucu's study. Whereas, in the studies of D'Zurilla and colleagues, pessimistic problem orientation resulted in a higher level in women. When the relevant finding is examined, the reason for the high level of lack of self-confidence in men in general can be explained by the different upbringing styles of women and men depending on gender roles (Blackstone, 2003). In a sense, the present finding can be thought to be related to the fact that women are given more responsibility in resolving relationship problems, while men are given more important roles in reducing the problems in the economic field.

When the findings of the current study were examined, no statistically significant difference was found in the cognitive flexibility levels of university students compared to their grade levels. As a matter of fact, a similar finding was found in the studies of Basut (2020) and Aygun (2018). However, Akyüz (2020)'s study findings with freshmen university students contradicts the finding in the current study. When the related finding is examined, it can be thought that cognitive flexibility is considered as a skill that develops as learning experiences are realized

and as the grade level increases, cognitive flexibility will increase due to the increase in the courses that require additional thinking skills. The fact that such a finding was not encountered in the current study may indicate that the sample participating in the study is cognitively flexible at a similar level at each grade level.

As an another finding, it was concluded that there was a statistically significant difference in the emotional self-efficacy levels of university students according to their grade levels. Accordingly, third-year students' emotional self-efficacy levels are higher than second-year students. As a matter of fact, a similar finding was found in the study of Çatal (2019). When the relevant finding is examined, it can be interpreted as follows: Young adulthood is a transitional period between adolescence and adulthood (Ericson, 1994). University students studying at lower grade levels may have more difficulties in making sense of and managing their emotions compared to upper grades, as they are closer to adolescence. It can be thought that those who have not fully completed the identity-finding process have not gained full competence in expressing and managing their emotions.

When the findings of the current study were examined, no statistically significant difference was found in the interpersonal problem-solving skills of university students according to their grade levels. When the relevant literature is examined, there is not enough research. With this finding, it can be thought that university students' styles of solving problems they encounter in close relationships do not differ in relation to the grade level they study, and that they are at a similar cognitive level.

When the findings of the current study were examined, no statistically significant difference was found in the cognitive flexibility levels of university

students compared to the education levels of their parents. Basut (2020) carried out a study that yielded partially similar results with the current research findings. In Basut's study, it was concluded that the cognitive flexibility levels of the students did not make a difference according to the education level of their mothers, a finding similar to the current study. As a different finding in the same study, it was concluded that the cognitive flexibility levels of those whose fathers were high school and college graduates were higher than those whose fathers were secondary school graduates. Aygun (2018) carried out another study that yielded partially similar results with the current research findings. In Aygun's study, a similar finding with the current study, it was concluded that the cognitive flexibility levels of the students did not make a difference according to the education level of their fathers. In the same study, the following was revealed as a divergent finding: The cognitive flexibility levels of those whose mothers are college graduates are higher than those whose mothers are primary, secondary and high school graduates. Since there are different research findings in examining whether the education level of the parents has a role in the cognitive flexibility of university students, it can be thought that the research designs and samples of the related studies are a factor in causing the difference in the findings.

Another finding in the current study is that there was no statistically significant difference in the emotional self-efficacy levels of university students according to the education levels of their parents. In the related literature, no study was found in which university students were studied as a sample, and emotional self-efficacy and parental education levels were examined together. However, the findings of Gök (2020)'s research with adolescents support the findings of the current study. In line with the findings of the relevant studies, the finding of the current study can be interpreted as follows: It can be thought that individuals' feeling emotionally competent and their

emotional processes are related to the relationships they have established with their parents or the attitudes of their parents (Van IJzendoorn, 1995). At this point, it is appropriate to consider that emotional competencies of university students can be interpreted as a reflection of the relationships they have established with their parents which may be affected by factors other than the education level of their parents.

As another finding demonstrates no statistically significant difference was found in the interpersonal problem-solving skills of university students according to the education levels of their parents. When the relevant literature was examined, sufficient data could not be reached.

When the research findings were examined, no statistically significant difference was found in the cognitive flexibility levels of university students according to the program types they studied. As a matter of fact, a finding similar to the finding in the current study is seen in the study of Aygun (2018). However, in the study of Akyüz (2020), a different finding stands out. In Akyüz's study, unlike the current research, it was concluded that the cognitive flexibility levels of the students studying in the Turkish language teaching department were low. When the studies are examined, different findings in various studies may be related to the quality of the department which one studies at, the content of the courses taught and the differences in the teaching models used.

As another finding illustrates a statistical difference was found in the emotional self-efficacy levels of university students according to the program types they studied. Accordingly, students studying in the field of social sciences have higher emotional self-efficacy levels compared to those studying in science. As a matter of fact, a finding similar to the finding in the current study is also seen in the studies of Beri

and Jane (2016), Çatal (2019), and Sánchez-Ruiz et al. (2010). Accordingly, related studies have concluded that students studying in the field of commerce in the studies of Beri and Jane, in the verbal field in the study of Çatal, and in the field of psychology in the studies of Sánchez-Ruiz et al. have high emotional self-efficacy levels. When the related finding is examined, it can be thought that the students studying in the field of social sciences will be in working environments where their bilateral relations with people will be important throughout their professional lives, and therefore, unlike other fields, the content of the courses on managing their emotions and relationships in their education programs can be put into consideration.

According to the research findings, no statistically significant difference was found in the interpersonal problem solving skills of university students according to the program types they studied. As a matter of fact, a similar finding was found in the study of Çam and Tümkaya (2016). When the relevant finding is examined, it can be thought that university students' ability to solve problems in their bilateral relations stems from other factors, different from the program types they studied.

When the research findings were examined, no statistically significant difference was found in the cognitive flexibility levels of university students according to their age. As a matter of fact, similar findings were also found in the studies of Akyüz (2020), Balta (2020) and Basut (2020). When the relevant finding is examined, it can be thought that it is important for individuals to be cognitively flexible in order to be able to produce solutions to the problems they encounter during young adulthood and to adapt to the radical changes that exist in their lives (Sternberg, 2000). However, the fact that the majority of the sample in the current

study was around the age of 21-22 may be associated with a similar level of cognitive flexibility.

Another finding in the current study is that there is a statistically significant difference in the emotional self-efficacy levels of university students according to their age. Accordingly, students in the 21-22 age range have higher emotional self-efficacy levels compared to those in the 19-20 age range. However, as a different finding from the current study, Gök (2020)'s study with a sample of adolescents shows that there is no significant difference in the self-efficacy levels of individuals according to their age. When the relevant finding is examined, young adult individuals who are closer to adolescence may have difficulties in understanding, perceiving and managing their emotions compared to those closer to adulthood.

According to the research findings, there was no statistically significant difference according to age in the levels of constructive problem solving, lack of self-confidence, unwilling to take responsibility and insistent-persevering approach of university students' interpersonal problem solving skills. However, a statistically significant difference was found in the level of approaching problems in a negative way of university students' interpersonal problem-solving skills according to age. Accordingly, the level of approaching problems in a negative way of university students aged 23 and over is higher than those between the ages of 21-22. As a matter of fact, a finding similar to the current study was found in the study of D'Zurilla et al. (1998) in which they examined social problem solving. However, in the studies of Çam and Tümkaya (2006), Koç, Terzi, Gül, (2015) and Londahl et al. (2005), along with some similar findings, divergent findings stand out. Unlike the current study, Çam and Tümkaya found that university students did not differ in levels of

approaching problems in a negative way according to their age, the constructive problem solving level was high in the 22-30 age range, and unwilling to take responsibility was at a high level in the 18-20 age range. On the other hand, Koç, Terzi, Gül, and Londahl et al. found that university students did not differ according to their age in levels of approaching problems in a negative way, along with other sub-dimensions. It can be thought that the different findings in various studies are due to the characteristic features of the relevant samples in the study. Young adulthood includes individuals who are at the end of their adolescence period, who are in the process of getting used to university life and separation from the family, and individuals who are at the end of their university life and step into adulthood with their professional life (Kılıç, 2013). However, students aged 23 and over, who are at the end of their education life and struggling to achieve economic freedom, may exhibit pessimistic approach towards problems due to their living conditions.

## CHAPTER 6: CONCLUSION

1. It has been observed that there is a significant relationship between the cognitive flexibility and emotional self-efficacy levels of university students. It was found that as the cognitive flexibility levels of university students increase, their emotional self-efficacy levels also increase.
2. It has been observed that there is a significant relationship between the cognitive flexibility levels and interpersonal problem solving skills of university students. It has been found that as the cognitive flexibility levels of university students increase, their constructive problem solving and insistent-persevering approaches increase, and the levels of approaching problems in a negative way, lack self-confidence and unwilling to take responsibility decrease.
3. It has been observed that there is a significant relationship between university students' levels of emotional self-efficacy and constructive problem solving, insistent-persevering approach and approaching problems in a negative way, but there is no significant relationship between levels of lack of self-confidence and unwilling to take responsibility. It was found that as the emotional self-efficacy levels of university students increase, their constructive problem solving and insistent-persevering approaches increase, while levels of approaching problems in a negative way decrease.
4. Cognitive flexibility levels of university students did not differ significantly according to their genders.

5. Emotional self-efficacy levels of university students differed significantly according to their genders. Women's emotional self-efficacy levels were found to be higher.
6. It has been observed that there is a significant difference in the levels of constructive problem solving, lack of self-confidence and unwilling to take responsibility approach of university students according to their genders, but there is no significant difference in the levels of approaching problems in a negative way and insistent-persevering approach. Constructive problem-solving skills of women were found to be higher. Men, on the other hand, had higher levels of lack self-confidence and unwilling to take responsibility.
7. Cognitive flexibility levels of university students did not differ significantly according to their grade levels.
8. Emotional self-efficacy levels of university students differed significantly according to their grade levels. Emotional self-efficacy of third-year university students was found to be higher than that of second-year students.
9. University students' interpersonal problem solving skills did not differ significantly according to grade levels.
10. The cognitive flexibility levels of university students did not differ significantly according to the education levels of their parents.
11. The emotional self-efficacy levels of university students did not differ significantly according to the education levels of their parents.
12. University students' interpersonal problem-solving skills did not differ significantly according to their parents' education levels.
13. The cognitive flexibility levels of university students did not differ significantly according to their program types.

14. Emotional self-efficacy levels of university students differed significantly according to their program types. Emotional self-efficacy levels of university students studying in the field of social sciences were found to be higher than those studying in science.
15. University students' interpersonal problem solving skills did not differ significantly according to their program types.
16. The cognitive flexibility levels of university students did not differ significantly according to their age.
17. Emotional self-efficacy levels of university students differed significantly according to their ages. Emotional self-efficacy levels of university students between the ages of 21-22 were found to be higher than those between the ages of 19-20.
18. It was found that university students' levels of approaching problems in a negative way differed significantly according to their age. On the other hand, their constructive problem solving, lack of self-confidence, unwilling to take responsibility and insistent-persevering approach levels did not differ significantly according to their age. The level of approaching problems in a negative way of university students aged 23 and over was found to be higher than those in the 21-22 age range.

## CHAPTER 7: SUGGESTION

Suggestions for researchers, psychological counselors and psychologists who will work in the fields of guidance and psychological counseling / psychology are presented below:

- Although the results obtained through the inventory and scale in the current study are in agreement with similar studies carried out in many ways, there are also variables that differ. For this reason, the aforementioned research variables can be re-examined with samples who have different demographic characteristics such as adolescents, adults and various occupational groups.
- The exploratory correlational research model was used in this study. In order to strengthen these results, new studies can be designed using different models such as the predictive correlational research model.
- In light of the current research, educational programs and course contents can be organized for university students concerning cognitive flexibility, emotional self-efficacy and interpersonal problem solving as concepts that can be developed later.
- Relevant variables can be studied with different research methods such as the longitudinal research method in future studies.
- A psychological counseling program can be designed with a group in which the research variables are studied, and the effectiveness of the relevant program can be checked in a manner of pre-test and post-test examinations by using scales measuring the relevant variables.

- Cognitive flexibility, emotional self-efficacy and interpersonal problem solving skills did not show a significant difference according to the education levels of the participants' parents. For this reason, related variables can be examined together with variables such as parental attitudes, perception, support, attachment styles, acceptance and rejection.
- When the relevant literature is examined, the limitations of the studies that include the concepts of cognitive flexibility, emotional self-efficacy and interpersonal problem solving have been observed. It is thought that more studies using these variables will contribute to the literature.

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## APENDICES

### Appendix A. Demographic Information Form

Değerli Katılımcılar,

Bu araştırma, üniversite öğrencilerinin bilişsel esneklik, duygusal öz-yeterlik ve kişilerarası problem çözme becerileri arasındaki ilişkiyi incelemek amacıyla yapılan bir yüksek lisans çalışmasıdır. Aşağıda bu çalışmanın amacı doğrultusunda sizden bazı bilgiler istenmektedir. Sorulara vereceğiniz yanıtlar toplu olarak değerlendirilecek ve sadece yüksek lisans çalışmasında kullanılacaktır. Ayrıca, sonuçlar kesinlikle gizli tutulacaktır.

Lütfen, soruları yanıtlarken maddeler üzerinde fazla düşünmeden aklınıza gelen ilk ifadeyi işaretleyiniz. Vereceğiniz samimi ve içten cevaplar bilimsel bir araştırmaya katkı sağlayacaktır, çalışmama göstermiş olduğunuz özveri için çok teşekkür ederim.

İrem SÜCÜLLÜ

Yeditepe Üniversitesi  
Eğitim Bilimleri Enstitüsü  
Yüksek Lisans Öğrencisi

1. Yaşınız: \_\_\_\_\_
2. Cinsiyetiniz:  
Kadın ( ) Erkek ( ) Diğer ( )
3. Kaçınıcı sınıfta olduğunuz:  
1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( )
4. Bölümünüz: \_\_\_\_\_
5. Annenizin eğitim durumu:  
Okur-yazar Değil ( ) İlköğretim ( ) Lise ( )  
Lisans ( ) Yüksek Lisans ( ) Doktora ( )
6. Babanızın eğitim durumu:  
Okur-yazar Değil ( ) İlköğretim ( ) Lise ( )  
Lisans ( ) Yüksek Lisans ( ) Doktora ( )

## Appendix B. Bilişsel Esneklik Envanteri

|                                                                                  | Hiç Uygun Değil | Uygun Değil | Biraz Uygun | Uygun | Tamamen Uygun |
|----------------------------------------------------------------------------------|-----------------|-------------|-------------|-------|---------------|
| 1. Olay ve durumları değerlendirmede iyiyimdir.                                  | 1               | 2           | 3           | 4     | 5             |
| 2. Zor durumlarla karşı karşıya kaldığımda karar vermekte güçlük çekerim.        | 1               | 2           | 3           | 4     | 5             |
| 3. Bir konuda karar vermeden önce birçok seçeneği göz önünde bulundururum.       | 1               | 2           | 3           | 4     | 5             |
| 4. Zor durumlarla karşılaştığım zaman, kontrolümü kaybediyordum gibi hissedirim. | 1               | 2           | 3           | 4     | 5             |
| 5. Zor durumlara pek çok farklı açılardan bakmak hoşuma gider.                   | 1               | 2           | 3           | 4     | 5             |

### Appendix C. Duygusal Öz Yeterlik Ölçeği

| Aşağıda verilen her bir ifadeyi okuduktan sonra, o ifade ile ilgili olarak “ şu anda kendinizden ne kadar emin olduğunuzu” değerlendiriniz.<br><br>Tepkinizi, sizi yansıttığını düşündüğünüz boşluğa (X) işareti koyarak belirtiniz. | Emin Değilim | Çok az eminim | Biraz eminim | Çoğunlukla eminim | Kesinlikle eminim |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------|--------------|-------------------|-------------------|
| 1. Kendi olumsuz duygularımı doğru olarak tanımlarım                                                                                                                                                                                 |              |               |              |                   |                   |
| 2. Başkalarına olumsuz duygularını olumlu duygularla değiştirmesi için yardım ederim                                                                                                                                                 |              |               |              |                   |                   |
| 3. Olumsuz bir duygu hissederken olumlu bir duygu yaratırım.                                                                                                                                                                         |              |               |              |                   |                   |
| 4. Olumlu bir duyguyu hissetmeme neyin sebep olduğunu bilirim                                                                                                                                                                        |              |               |              |                   |                   |
| 5. Başka biri olumsuz bir duygu hissederken o duyguyu doğru bir şekilde tanımlarım                                                                                                                                                   |              |               |              |                   |                   |

### Appendix D. Kişilerarası Problem Çözme Envanteri

|                                                                                      | Hiç Uygun Değil | Biraz Uygun | Uygun | Çoğunlukla Uygun | Tamamıyla Uygun |
|--------------------------------------------------------------------------------------|-----------------|-------------|-------|------------------|-----------------|
| 1. Kişilerarası ilişkilerimde bir problem yaşadığımda onu mutlaka çözmeye çalışırım. | 1               | 2           | 3     | 4                | 5               |
| 2. Problem yaşadığım kişinin gözüyle problemi görmeye çalışırım.                     | 1               | 2           | 3     | 4                | 5               |
| 3. Problem yaşadığımda ne olursa olsun, problem hemen çözülsün isterim.              | 1               | 2           | 3     | 4                | 5               |
| 4. Bir problemi çözerken “mutlaka bir sonuca ulaşmalıyım” diye düşünürüm.            | 1               | 2           | 3     | 4                | 5               |
| 5. Bir problem yaşadığımda kendimi çaresiz hissederim.                               | 1               | 2           | 3     | 4                | 5               |